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DRAFT ENVIRONMENTAL IMPACT REPORT

ER 88-50

Tentative Map
Subdivision 5915

Nine-Unit Residential Development
Shepherd Canyon Road & Paso Robles Drive
Oakland Hills

April, 1989

Steven D. Billington
Planning and Environmental Research
1226 Warner Court
Lafayette, CA 94549

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City of Oakland
Oakland, California

DRAFT ENVIRONMENTAL IMPACT REPORT FOR:

Shepherd Canyon Residences

(Project name)

California Environmental Quality Act (CEQA)

SUMMARY

A. GENERAL INFORMATION

Project Title Shepherd Canyon Residences (Subdivision 5915)

Location Northwest corner of Shepherd Canyon Road & Paso Robles Drive

Project Sponsor Shepherd Canyon Development Corporation

Address 1910 Olympic Blvd., #340, Walnut Creek, CA 94596

B. PROJECT DESCRIPTION

Planned Unit Development subdivision of 5 acres into nine single-family lots and three open space parcels (totalling approx. 2.3 acres). The proposal includes abandonment of unimproved Park Boulevard public right-of-way, construction of a private street to serve eight of the proposed lots, and provision of a bicycle/pedestrian trail along the Shepherd Canyon Road frontage.

C. SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF THE PROJECT

1. Significant Impacts and Potentially Significant Impacts

a. Open Space Areas

Project plans show three "permanent open space" parcels, but the matter of ownership and long-term maintenance responsibility for these parcels has yet to be resolved. The applicant has indicated a desire to dedicate these parcels to the City or to the East Bay Regional Park District. However, no information has been presented indicating whether the City or the Park District would be willing to accept such dedications.

b. Project Fire Hazard

The project site is in a critical fire-hazard area, and the Fire Prevention Bureau has indicated that firefighting access to the rear yards of the proposed units could be difficult due to the terrain of the upslope lots. Thus, even with good Fire Department response time and adequate firefighting water supply, a structural fire could go out of control and spread along the back sides of adjacent units or could spread upslope and involve off-site property and structures.

c. Access to On-Site Portion of Shepherd Canyon Trail

For heavy maintenance-vehicles, the project-site Park Boulevard public right-of-way provides the only access to the Shepherd Canyon Trail between Paso Robles Drive and Snake Road. Because this right-of-way would be replaced by a private street, the City must have assurance that project development as proposed would allow the continuation of necessary maintenance access without subjecting the City to unwarrented access problems or property-damage-liability problems.

d. Project Parking

Because most of the units proposed along the private project street will not have driveways long enough to accommodate parked vehicles, and because it can be expected that some residents will use one or both of their garage spaces for non-vehicle storage, it can be anticipated that there will be substantial competition for proposed perpendicular parking-bay spaces, and that resident and guest parking will periodically--or regularly--occur along the south side of the street, thereby resulting in congestion and a reduction in travelway width to less than the 20 feet needed to provide adequate emergency access.

D. POSSIBLE MITIGATION MEASURES TO REDUCE SIGNIFICANT AND POTENTIALLY SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

a. Open Space Areas

Before the Planning Commission takes action on the project application, the applicant should present a proposal for resolving the issue of ownership and long-term maintenance of the proposed open space parcels. Any of the open space parcels not dedicated should be retained as commonly-owned project open space, with development rights granted to the City, to preclude future residential development, and with adequate provision for long-term maintenance responsibility by the nine project owners.

b. Project Fire Hazard

Project units should be equipped with residential fire-sprinkler systems.

c. Access to On-Site Portion of Shepherd Canyon Trail

The roadway section of the proposed private street should be built to a standard which will accommodate long-term public- and utility-vehicle access, and the applicant's final improvement plans should include provisions, acceptable to the City, for controlling general access to the trail, at the west end of the private street, while accommodating maintenance and emergency access.

d. Project Parking

The project plan should be revised to include parallel parking bays along the south side of the proposed private street.

e. Noise

For operable windows facing Shepherd Canyon Road (units on Lots 2-9), install 3/16" glass (rated STC 25 or higher) or any type of double-pane thermal insulating glass.

f. Geology and Grading

i. Quaternary Slopewash

In accordance with the recommendations of the applicant's geotechnical consultant, foundation walls or separate retaining walls at the backs of units should be designed to resist active creep forces. Drainage facilities behind each wall should include concrete-lined interceptor ditches to intercept overland flow, and subdrains to intercept subsurface water.

ii. Seismically-Induced Groundshaking

The most effective methods for controlling earthquake damage are adherence to good construction practices involving grading, drainage, and foundation design standards which are conservative with regard to earthquake safety. Although the applicant's geotechnical report provides prudent recommendations for site development, the following additional precautions are recommended:

- No cut slopes should be permitted in colluvial areas without specific approval of the project's geotechnical engineer.
- Cut-slope gradients in bedrock areas should not exceed 2:1 (50%) without the specific approval of the project's geotechnical engineer.
- A Grading Completion Report for the project should include a detailed as-built geologic map, prepared by a registered geologist. The purpose of such a map would be to ensure that anticipated conditions were actually encountered during grading, and/or that unexpected conditions were recognized, and their significance called to the attention of the engineer, so that design could be adjusted in the field.
- If fill slopes are planned, specific recommendations should be provided by the project's geotechnical engineer.

iii. Test Pits

If improvements are planned in areas of test pits, the test-pit backfill should be properly compacted during site grading.

g. Drainage

i. Drainage Plans

Final improvement plans should include pipe sizes, with appropriate runoff calculations, and drainage details for individual lots, including foundation-wall and retaining-wall subsurface drainage and methods for collecting and conveying roof runoff.

ii. Drainage Maintenance

In conjunction with submittal of final project plans, the applicant should propose a system for assuring long-term drainage-system maintenance and repairs, permanently binding on project property owners, to be included in the project's conditions of approval.

iii. Proposed Interceptor Ditch

In conjunction with review of project drainage plans, the City should consider whether runoff from individual subdivision lots should be conveyed onto or across other lots. Ideally, each of the proposed lots would have its own system for collecting upslope, overland flow and conveying it to the nearest adequate storm drain. This is both a technical issue (with regard to the design and maintenance requirements of project drainage facilities) and a legal/policy issue (with regard to the diversion of subdivision runoff and potential liability problems for the City). In any case, the proposal for diverting project-site runoff to the East Bay Park property, located within the west end of the project site, should be carefully considered.

iv. Runoff from Existing Houses on West Circle and Balboa Drive

The final project improvement plans should be accompanied by a report from the applicant's geotechnical consultant, specifically addressed to the effects of runoff from upslope units onto the colluvial areas above proposed Lots 6-9. This report should provide substantive information indicating whether the proposed drainage facilities will be adequate to protect the colluvial areas and associated units or whether an additional, mid-slope drainage ditch will be needed above the colluvial areas.

h. Visual Characteristics and Vegetation

i. Provide natural-appearing finish materials and neutral colors, to limit strong visual contrasts.

ii. Provide a detailed vegetation and landscaping plan addressed to methods of minimizing project-site vegetation removal and providing landscaping to optimize long- and short-term vegetative screening. This plan should be coordinated by a landscape architect but should include recommendations from a qualified vegetation specialist with knowledge of characteristic species of the Oakland Hills biological setting.

E. AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED

Willie Yee, Anu Raud; Planning Department, City of Oakland

Moshe Dinar, Dinar-Rubin & Associates (project architects)

Public Works Department, City of Oakland; Engineering Services and Traffic Divs.

Police Department, City of Oakland; Planning Division

East Bay Municipal Utility District; Engineering and Water Service Planning Depts.

Fire Department, City of Oakland; Fire Protection Bureau and Engine 24

Oakland Public Schools, Administrative Offices

Edward Franzen, Consulting Traffic/Civil Engineer, Concord

Darwin Myers, Engineering Geologist, Darwin Myers Associates, Martinez

Larry Seeman Associates, Pt. Richmond (vegetation/wildlife consultants)

Parker & Associates, architects (Computer Assisted Design graphics), Lafayette

F. PUBLIC AGENCIES HAVING JURISDICTION BY LAW OVER THE PROJECT

State of California (California Environmental Quality Act)

City of Oakland (Lead Agency; approval agency)

G. DRAFT EIR PREPARED BY: Steven D. Billington
Planning and Environmental Research
1226 Warner Court
Lafayette, CA 94549

H: DATE COMPLETED: April, 1989

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APPENDIX E: Security recommendations from Oakland Police Dept.

APPENDIX F: Description of project "perspective photo montage" technique.

APPENDIX G: Comments on Administrative Draft EIR, from City Office of Parks and Recreation.

APPENDIX H: Comments on Administrative Draft EIR, regarding drainage, from City Public Works Dept.

I.
PROJECT DESCRIPTION

A. DEVELOPMENT APPLICATION

Shepherd Canyon Development Corporation, the project applicant, proposes a planned unit development (PUD) subdivision of approximately 5.6 acres (gross) into nine single-family residential lots and three open space parcels. The proposal includes abandonment of the existing, unimproved Park Boulevard public right-of-way which serves the site, construction of a new private cul-de-sac street to serve eight of the nine proposed units, and provision of a partially-paved bicycle/pedestrian trail along the south boundary of the site.

B. SITE DESCRIPTION (Figs. 1-4)

Location. The project site is located in Shepherd Canyon, at the northwest corner of Shepherd Canyon Road and Paso Robles Drive, approximately one mile east of the Warren Freeway. The site has approximately 850 feet of frontage along the north side of Shepherd Canyon Road and approximately 220 feet of frontage along Paso Robles Drive.

Setting. Shepherd Canyon is characterized by steep ravine terrain and a thick vegetative cover of native and introduced trees and shrubs. Shepherd Canyon Road follows the canyon floor, along an alignment approximating the original course of Shepherd Creek. Because of the generally-steep terrain, there are relatively few side streets providing access to the canyon's residential areas. Historically, development along the canyon floor has been limited by public ownership of land.

Site Physical Characteristics. The site is an irregularly-shaped area sloping up from the northerly side of Shepherd Canyon Road. On-site elevations range from about 790 feet above sea level at the southwest corner, to about 910 feet along the northerly boundary. Thus, overall physical relief is on the order of 100 feet. Across the site, slope steepness varies considerably. The area fronting Shepherd Canyon Road, along the old railroad right-of-way, has moderate slope, around five percent or less. Above this area, the hillside slope is on the order of 35 to 50 percent (35-50 ft. horizontal/100 ft. vertical). At the west end of the site, there is a nearly-vertical cut slope above the old railroad right-of-way, and a steep-sided drainage channel which enters the northwest corner of the site. The lower reach of this channel is a broad, shallow swale, apparently the result of railway road-bed fill.

Existing site improvements are limited to the original railroad earthwork, modest paving along the on-site Shepherd Canyon Trail, a barrier and gate near Paso Robles Drive, to restrict vehicle access to the trail, and various storm-drain and sewer facilities which drain from the neighborhood above the site to Shepherd Canyon Road. PG&E power transmission lines cross the northeast corner of the site.

With the exception of the area of the trail and some adjacent grassland area, the project site has a dense cover of native and introduced trees and shrubs.

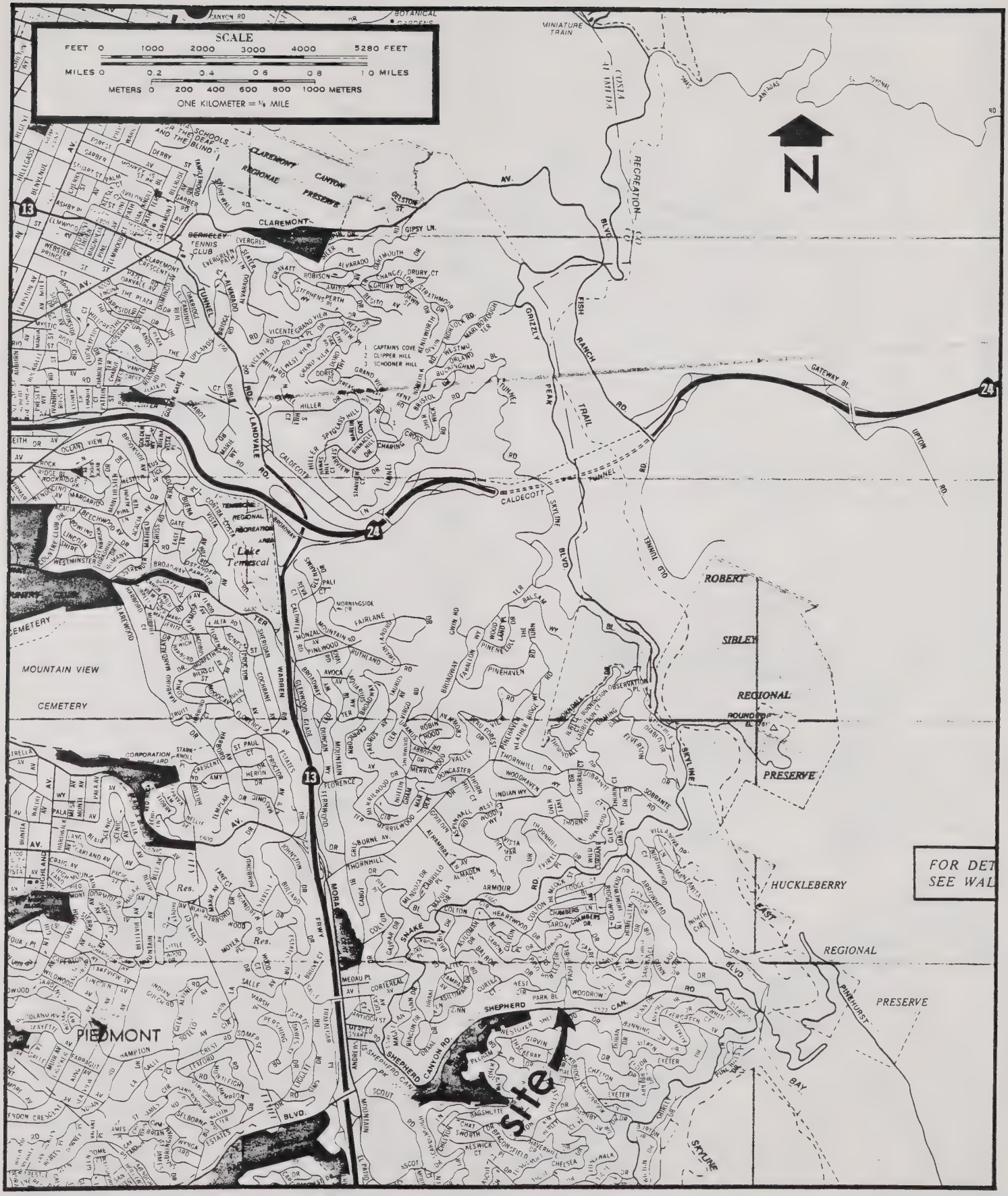


Figure 1.
AREA SETTING

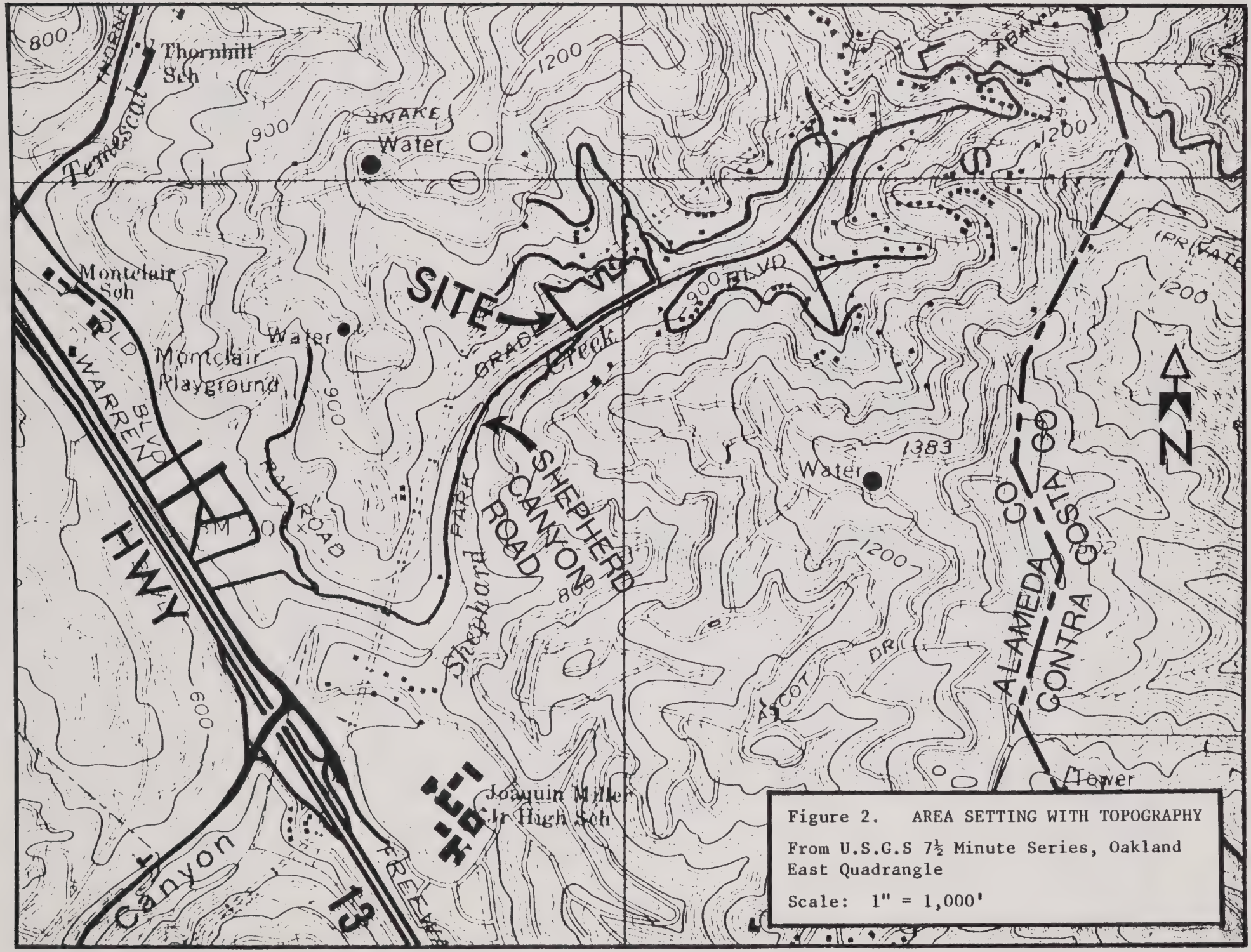


Figure 2. AREA SETTING WITH TOPOGRAPHY

From U.S.G.S 7½ Minute Series, Oakland East Quadrangle

Scale: 1" = 1,000'

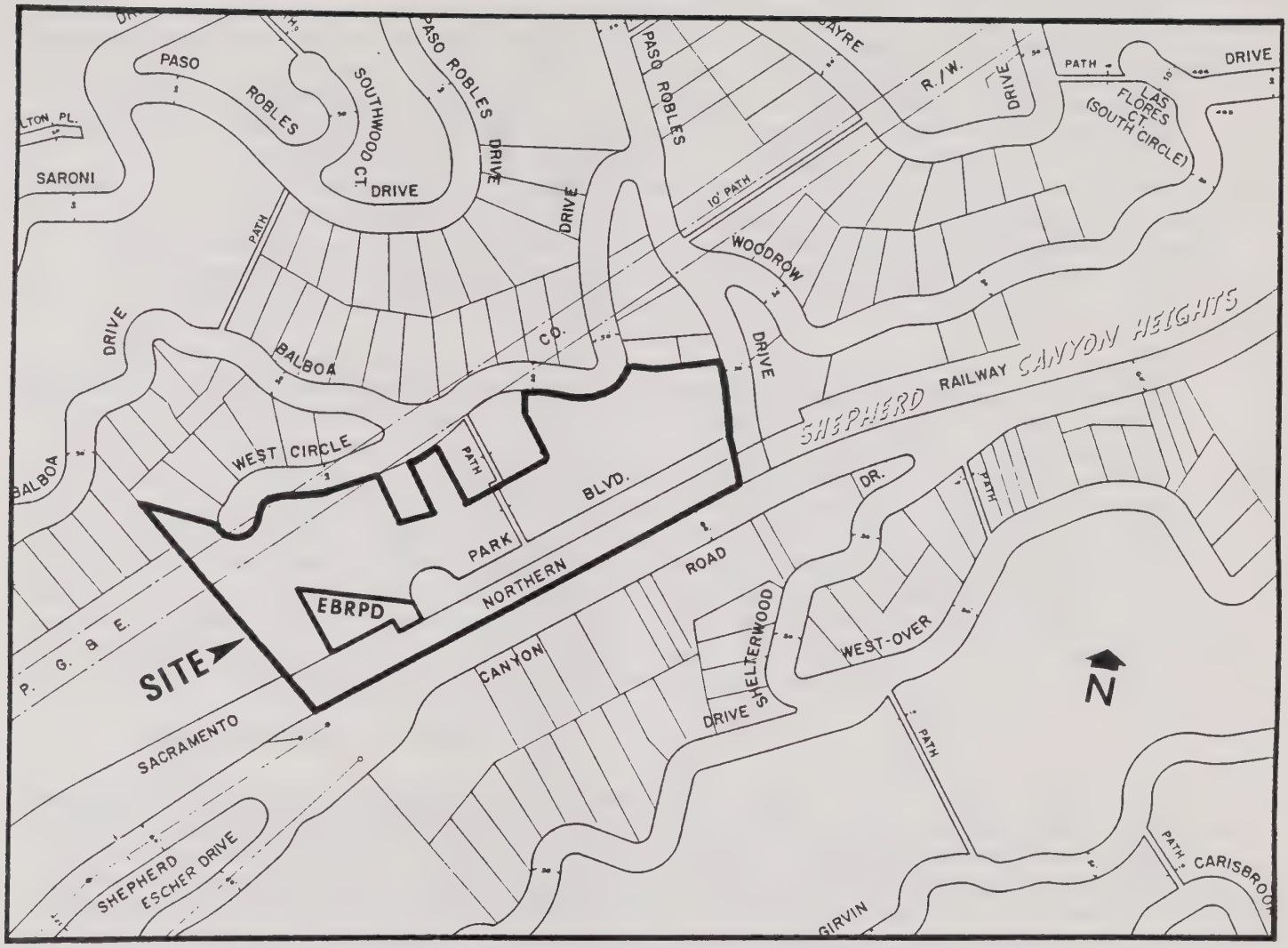


Figure 3.

NEIGHBORHOOD SETTING - Project site and surrounding streets and parcels.

Scale: 1" = 300'

Shepherd Canyon Heights is a 10-unit single-family development, currently under construction. The nearest unit of this development will be about 500 feet from the project site.

Most of the parcels along the opposite side of Shepherd Canyon Road from the site are owned by the City of Oakland. Land abutting the project site to the southwest is owned by PG&E.

Land Ownership. The project site encompasses a number of residential lots of record, a segment of Park Boulevard public right-of-way, and a long parcel along Shepherd Canyon Road, which was once a segment of the Sacramento Northern Railroad right-of-way. Prior to its recent acquisition by the applicant, an area of about 1.8 acres at the northwest corner of the site was owned by PG&E, which retained a 60-foot-wide easement to accommodate the power lines which cross that corner of the site. A triangular parcel of approximately 0.32 acre, owned by the East Bay Regional Park District, is located within the west end of the site, abutting the north side of the former railroad right-of-way. At one time, a portion of the site was publicly-owned land designated as right-of-way for the Shepherd Canyon Freeway; a number of parcels on the south side of Shepherd Canyon Road, opposite the project site, are still owned by the City of Oakland.

Surrounding Uses. The area around the project site is a combination of vacant land and hillside residential development on small- to moderate-size lots, on the order of 5,000 to 10,000 square feet. In the immediate area of the site, residential development consists of a few units to the north and northeast, along West Circle, Balboa Drive, Paso Robles Drive, and Woodrow Drive. There are no units fronting Shepherd Canyon Road near the site. As of this writing, a 10-unit single-family residential development known as Shepherd Canyon Heights is being constructed along the northerly frontage of Shepherd Canyon Road, on a long, relatively shallow site which extends from Paso Robles Drive to Saroni Drive. The nearest unit of this development will be located approximately 500 feet east of the project site. The plan for Shepherd Canyon Heights calls for landscaping and a bicycle/pedestrian path along that project's frontage.

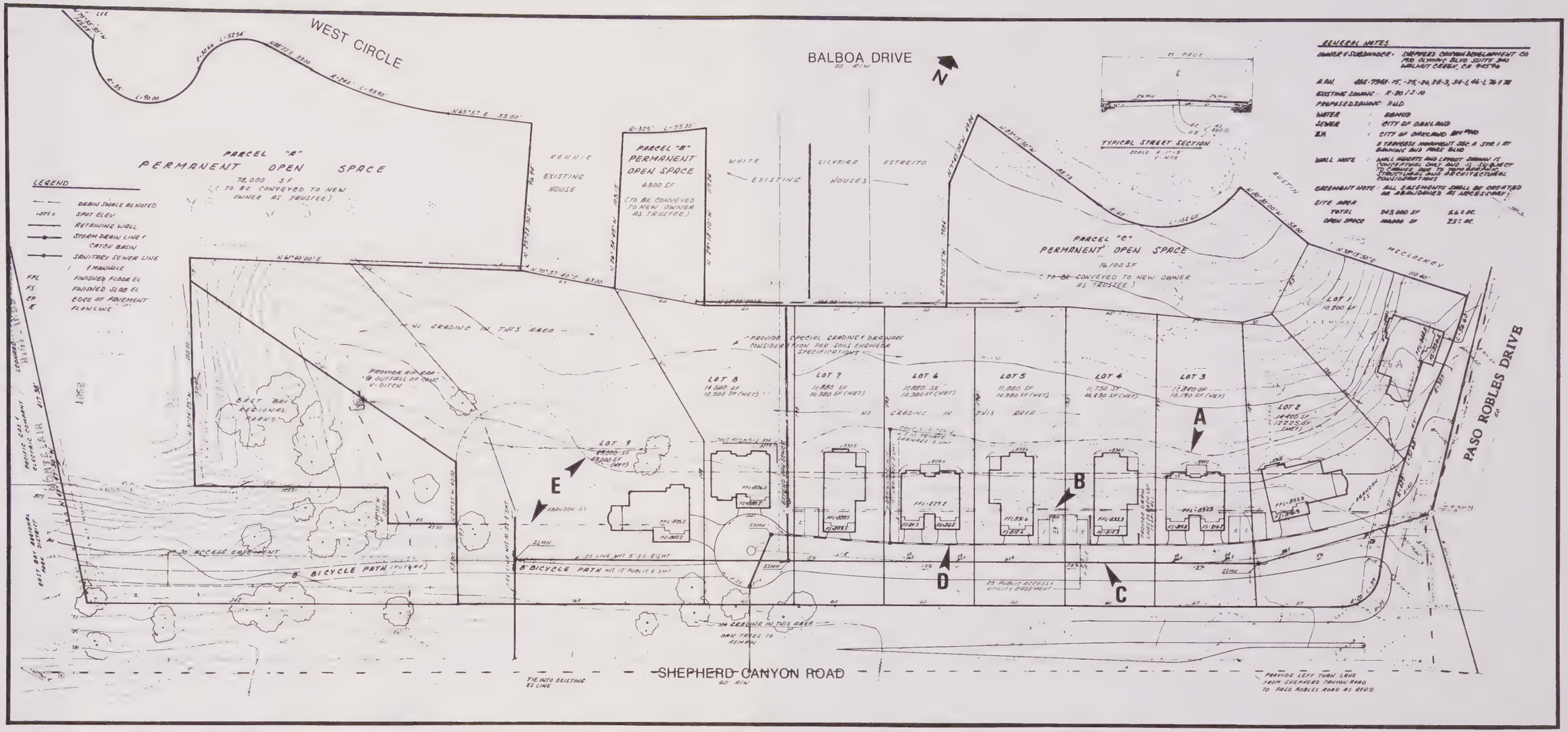
C. PROPOSED DEVELOPMENT (Figs. 5 & 6)

House Locations, Access, and Parking. One project unit would be located at the northeast corner of the site, fronting Paso Robles Drive. The other eight units would be located along the lower slope of the site, fronting a private cul-de-sac street which would provide access from Paso Robles Drive. This street would be approximately 440 feet long and 24 feet wide. Off-street parking would be provided by a two-car garage for each unit and a number of perpendicular parking bays along the north side of the project street. The eight units along the new project street would be located within or partially within the area of the existing Park Boulevard right-of-way, which, as proposed, would be abandoned.

Lot Areas and Density. The project's nine residential lots would comprise a total of approximately 3.3 gross acres (area including proposed right-of-way) of the approximately 5.6 total gross acres of the site. The remaining 2.3 acres of the site are proposed to be in permanent open space.

The nine proposed residential parcels have net areas (not including right-of-way) ranging from 10,200 square feet (0.23 acre) to 43,000 square feet (0.99 acre). The largest parcel, 43,000 square feet, is Lot 9, at the west end of the proposed street; the smallest parcel, 10,200 square feet, is Lot 1, at the northeast corner of the site, fronting Paso Robles Drive. Lots 2 through 8 range in net area from 10,190 square feet (0.23 acre) to 12,500 square feet (0.29 acre).

The total net area of the project site (excluding the area of the street and a 12-foot-wide easement across Lot 9) is approximately 5.04 acres. Thus, with nine units proposed, project density is about 1.79 units/acre, or one unit/24,390 square feet of project-site net area.



A: Concrete-lined interceptor ditch, to collect upper-elevation surface runoff.

B: Existing sewer line (to be abandoned).

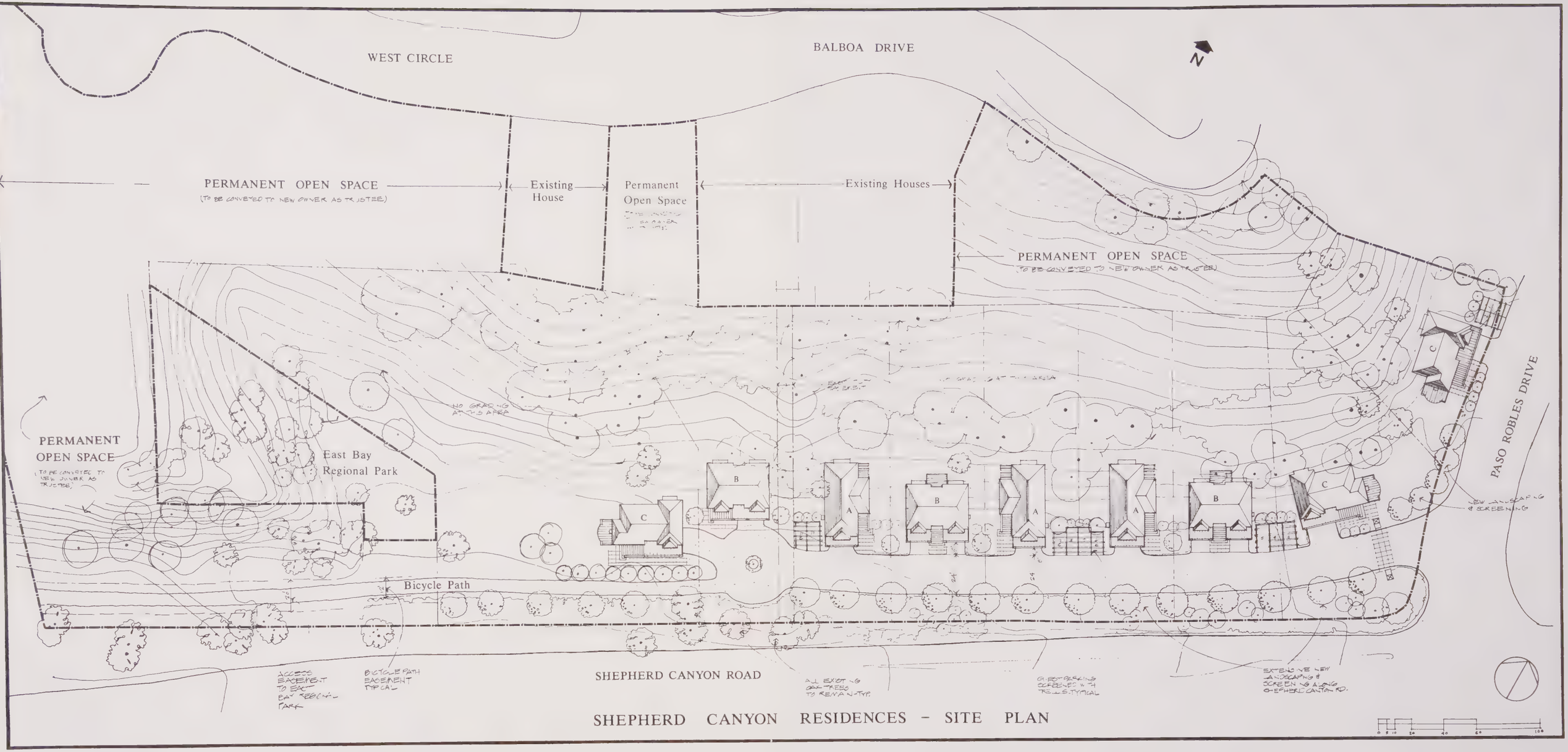
C: Proposed sewer line.

D: Proposed storm drain.

E: Park Boulevard right-of-way.

Figure 5.

PROJECT TENTATIVE MAP
Subdivision 5915
Scale: 1" = 70'



SHEPHERD CANYON RESIDENCES - SITE PLAN

Figure 6.
SITE PLAN
Scale: 1" = 60'

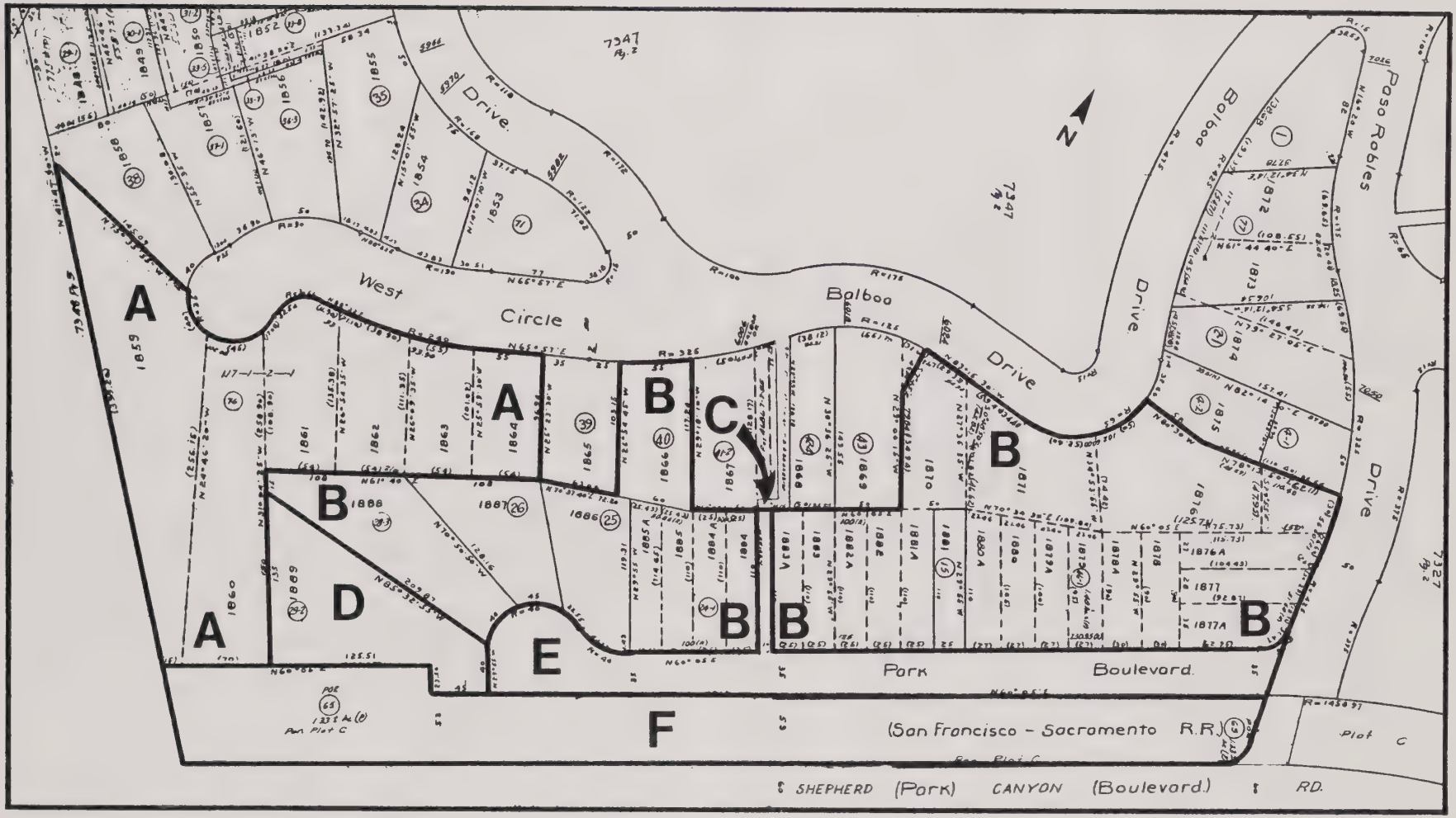


Figure 4. LAND OWNERSHIP (Alameda County Assessor's parcel map. Approx. scale: 1" = 120')

A: Former PG&E land; now owned by the applicant.

B: Areas of residential lots of record owned or controlled by the applicant.

C: Public path right-of-way and sewer easement.

D: Parcel owned by East Bay Regional Park District.

E: Park Boulevard public right-of-way (City owned), proposed by applicant to be abandoned.

F: Former Sacramento Northern Railroad right-of-way, owned by the applicant.

Open Space Area. Proposed open space consists of about 40% of the project-site area, in three separate parcels totalling approximately 2.3 acres. The largest of these is proposed Parcel A, comprised of the former PG&E property at the northwest corner of the site and a portion of the old railroad right-of-way at the southwest corner of the site, which together total 78,000 square feet (1.79 acres). Open space Parcel B is a vacant residential lot of 6,300 square feet (0.15 acre) which fronts the north site boundary at the intersection of West Circle and Balboa Drive. Open space Parcel C is an area of 16,100 square feet (0.37 acre) at the north boundary of the east end of the site, fronting Balboa Drive.

The applicant proposes that the three open space parcels be dedicated to the East Bay Regional Park District or the City of Oakland.

Bicycle/Pedestrian Trail. The proposed trail route is just inside the southerly site boundary, approximately along the alignment of the existing dirt road on the former railroad right-of-way. This route would consist of a 20-foot-wide, unimproved easement between the west site boundary and the west boundary of proposed Lot 9 (which would include easement access to the Park District parcel at the west end of the site); a 12-foot-wide easement and 8-foot-wide paved path, between the west boundary of Lot 9 and the west end of the project street; and a public trail easement along the project street.

Off-Site Roadway Improvements. Proposed off-site improvements include sufficient widening of Shepherd Canyon Road to accommodate a separate left-turn lane onto Paso Robles Drive.

D. PROPOSED HOUSE DESIGNS (Figs. 7-9)

The proposed houses are three-story, split-level units which would be stepped up the lower slope of the site, with first-floor garages and second- and third-floor living spaces. In order to minimize hillside excavation, most of the units would be sited close to the project street, and would have driveway lengths of five to ten feet. Project plans indicate three basic house designs, with sets of three units conforming to each of the three basic designs. Variety would be provided by a combination of the three basic designs, some reversed floor plans, the relative distribution of the basic designs, and contrasts in finish colors and perhaps in design details. (Appendix A contains a discussion of the house designs, provided by the project architect.)

Figure 7. TYPICAL ELEVATIONS

Three basic house styles are proposed, as shown in this figure--Unit A, Unit B, and Unit C. Three units of each design would be built. Variety would be provided by the relative distribution of the basic designs, some reversed floor plans, variations in the garage/living-space configurations, and contrasts in finish materials, colors, and perhaps design details.

Sample floor plans which correspond with these elevations are shown on Figure 8. Proposed distribution of the three basic designs is shown on Figure 6.

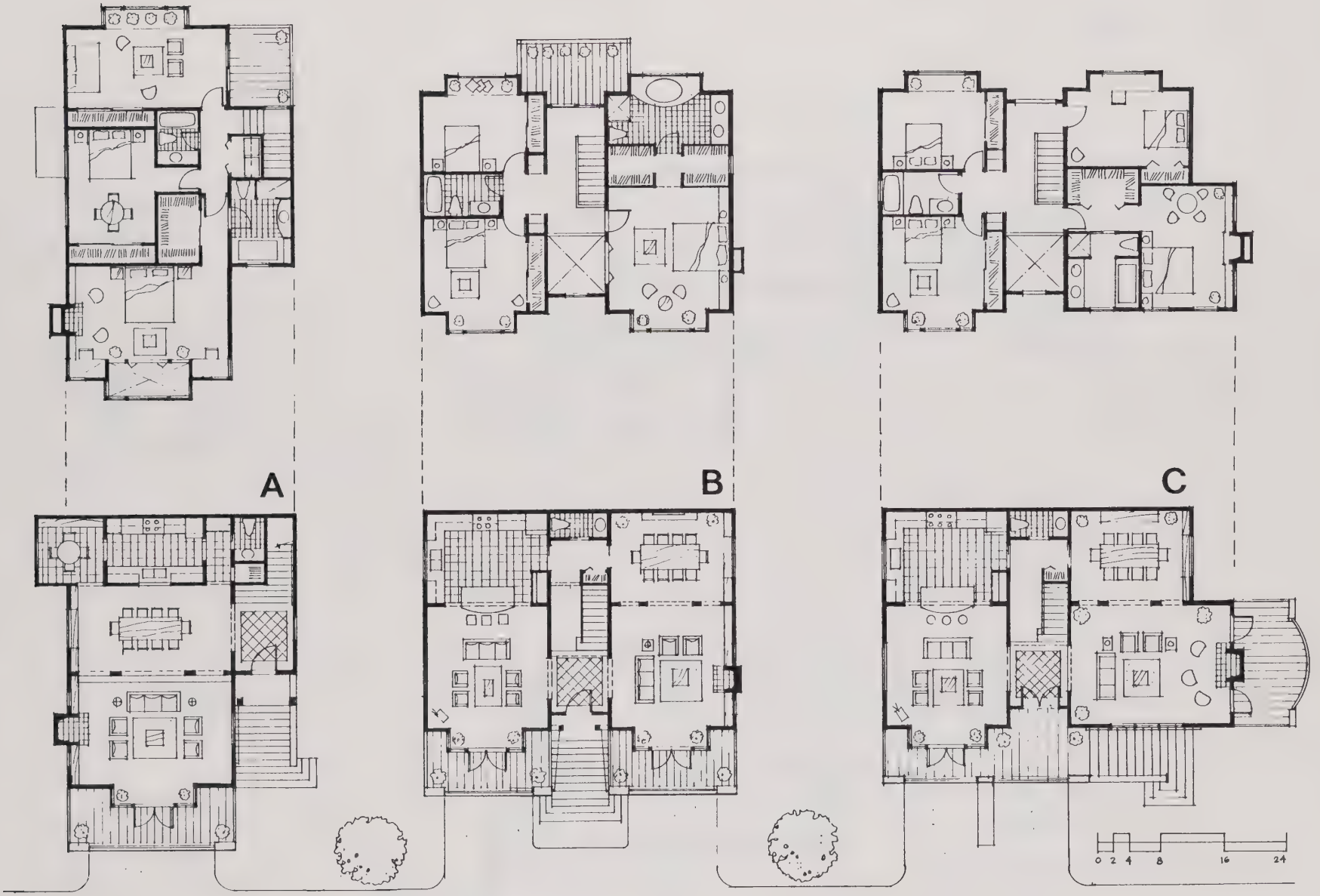


Figure 8. TYPICAL FLOOR PLANS

Typical second- and third-floor plans of proposed Unit A, B, and C house styles. Some floor plans would be reversed; some garage/living-space configurations would be different. (Sample elevations which correspond with these floor plans are shown on Figure 7.)

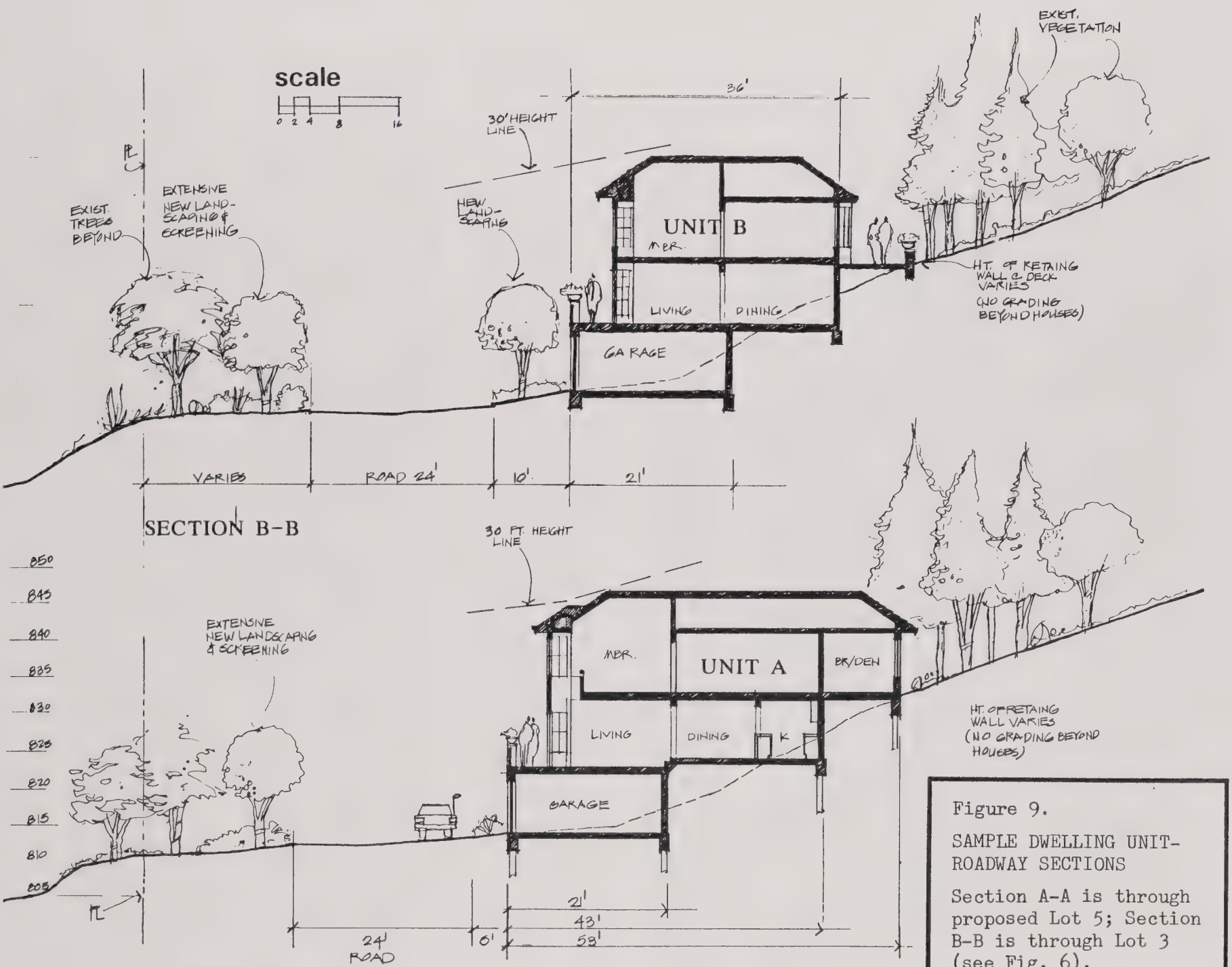


Figure 9.

SAMPLE DWELLING UNIT-ROADWAY SECTIONS

Section A-A is through proposed Lot 5; Section B-B is through Lot 3 (see Fig. 6).

E. PROJECT AND EIR HISTORY

This document is the second Draft EIR which has been addressed to proposed development of the project site. The first Draft EIR, dated April, 1984,* addressed a proposed 19-unit PUD condominium development. After the 1984 Draft EIR was prepared, the 19-unit plan was modified a number of times, over a period of several years. These modifications culminated with the currently-proposed plan for nine units. (The original 19-unit plan and two later plans are shown on Figures 10-12.)

The first plan change involved reduction in the number of proposed units from 19 to 17, by elimination of two units from the west end of the site. Two of the originally-proposed units overlapped the boundaries of the East Bay Park property at the west end of the site, and the applicant was unable to acquire that parcel. This change was accompanied by general rearrangement of units at the west end of the site, a reduction in the length of the project street, relocation of the project street about 8-10 feet farther north, an increase in the width of the proposed bicycle/pedestrian trail, and realignment of the trail to move it away from the top of the cut-slope embankment above Shepherd Canyon Road and to avoid cutting into the embankment at the west end of the trail. These secondary changes were all responsive to concerns expressed in the 1984 Draft EIR.

The revised, 17-unit plan was submitted while the 1984 Draft EIR was being reviewed, and was included and discussed in the Final EIR of February, 1986.* (The 1986 Final EIR was both the response document associated with the 1984 Draft EIR and an addendum to the 1984 Draft, addressing changes in impact resulting from the new 17-unit plan.)

Beginning in May, 1985, a number of hearings were held on the 1984 Draft EIR, the Final EIR, and the proposed development plan. However, because of the City's and the neighbors' concerns regarding the proposed development, no action was taken by the Planning Commission to either certify the EIR or approve the project; and it was suggested that the applicant should substantially revise the plan and submit a new application.

A second plan change was prepared in 1988, involving major modification of the overall concept for site development. New house designs were proposed; the number of units was reduced from 17 to 13; two units were sited at the east end of the project, fronting Paso Robles Drive; a one-way exit-only roadway was proposed from the west end of the project street to Shepherd Canyon Road; and all previously-proposed units fronting West Circle and Balboa Drive, at the northerly site boundary, were eliminated. This plan included sufficient widening of Shepherd Canyon Road to accommodate a left-turn lane onto Paso Robles Drive (as recommended in the 1984 Draft EIR), and parallel parking all along the south

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* The two documents which comprise the previous EIR are 1) "Draft Environmental Impact Report, ER 83-17, PUD 83-17B, 19-Unit Residential Development, Shepherd Canyon Road & Paso Robles Drive," June, 1984; and 2) "Final Environmental Impact Report (ER 83-17), An Addendum to the Draft Environmental Impact Report," February, 1986. These two documents are included by reference in this EIR; they are available for public review at the office of the Planning Department, Oakland City Hall.

side of the project street. The alignment of the bicycle/pedestrian trail was retained along the south site boundary, at the top of the cut-slope embankment of Shepherd Canyon Road. The 13-unit plan also differed from previous plans by showing site development as a PUD subdivision, with 13 residential lots and several undeveloped parcels, similar to the current nine-lot proposal, rather than showing condominium development with commonly-owned open space.

It was intended that the 13-unit plan be submitted as part of the new project-site development application. However, after additional discussions with City staff and a number of meetings with project-site neighbors, the applicant modified the plan again, to produce the current nine-unit proposal. With the submittal of this proposal, a new EIR was required. (Even though a new EIR was required, a new Initial Study was not necessary. The original project Initial Study, contained in the 1984 Draft EIR, is applicable to both the original EIR and this EIR.)

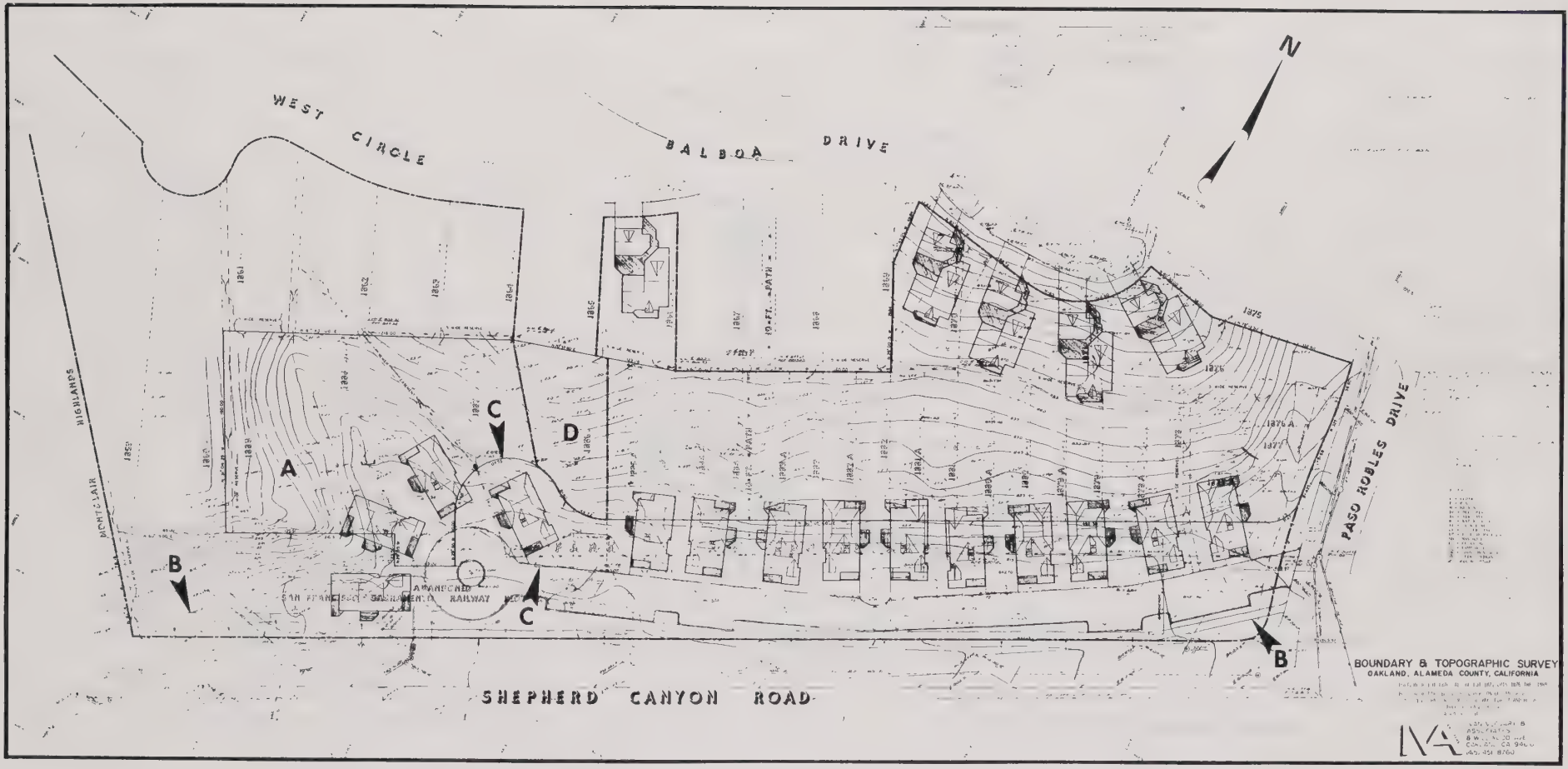


Figure 10. ORIGINAL 1984 PROJECT SITE PLAN

This plan was the subject of the project's original Draft EIR, prepared in June, 1984. At that time, the proposal was for 19 single-family units with condominium ownership. Five of the proposed units were sited along the north site boundary, fronting Balboa Drive and West Circle; fourteen units were sited at the south site boundary, fronting a private street along the previous Sacramento Northern Railroad right-of-way. A: Area of one-third acre parcel owned by East Bay Regional Park District; it was proposed that this parcel be acquired from the Park District and included as part of the project site. However, the parcel was retained by the Park District, and is shown on all later plans as a separate parcel. B: Six-foot-wide bicycle/hiking trail along top of embankment above Shepherd Canyon Road. C: Existing Park Boulevard public right-of-way. D: Existing residential parcel which was not part of the proposed project. Access to this parcel was to be across an easement between the south boundary of the parcel and the new project street.

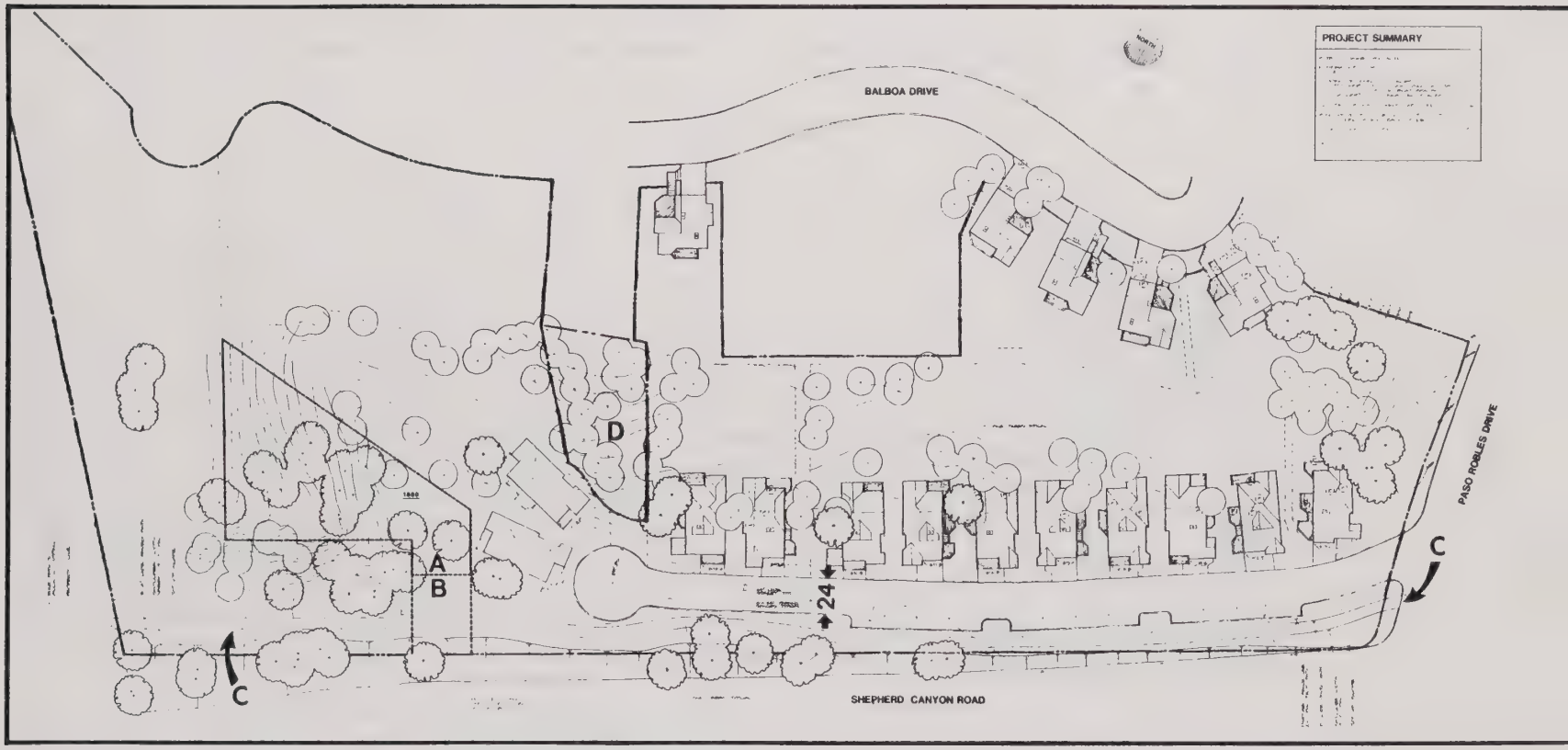


Figure 11. 1986 REVISION OF ORIGINAL 1984 PROJECT SITE PLAN

After preparation of the original Draft EIR of June, 1984, this revision of the original site plan was submitted, and was addressed in the Final EIR of February, 1986. For this revision, the two most westerly units of the original plan were eliminated. This reduced the number of units from 19 to 17. The proposed project street was moved about 8-10 feet farther north, allowing the width of the proposed trail to be increased from six to eight feet, with two- to four-foot shoulders; and the Park District parcel at the west end of the site was shown as a separate parcel, not included in the project-site area. Otherwise, this revised plan was essentially the same as the originally-proposed plan. A: Park District parcel. B: Access easement to Park District parcel. C: Bicycle/hiking trail. D: Interior parcel, not part of project site, with access easement from end of proposed project street.

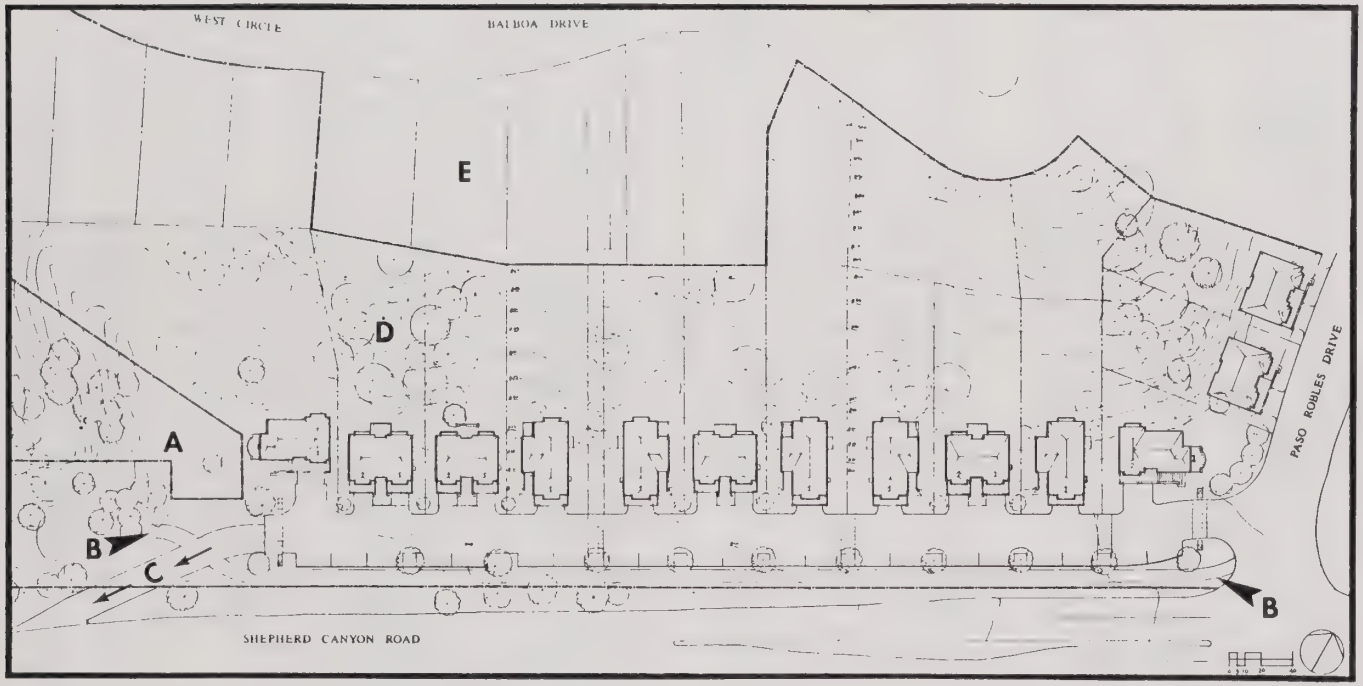


Figure 12. INTERMEDIATE SITE-PLAN DESIGN, 1988

This design was intended to be the site-plan submittal for the second project-development application. It shows a total of 13 units, six fewer than originally proposed and four fewer than proposed in the 1986 plan revision. Although no units are located along Balboa Drive or West Circle, two units are shown fronting Paso Robles Drive, along the east site boundary. However, after discussions with City staff and project-site neighbors, the applicant rejected this plan and prepared the nine-unit plan which is the subject of the current application.

A: Park District Parcel at west end of site. B: Eight-foot-wide trail along top of Shepherd Canyon Road embankment (not part of current plan). C: One-way exit road to Shepherd Canyon Road. (This road, which would have major visual impact from Shepherd Canyon Road eastbound, was required by staff, as an emergency route. With the currently-proposed nine units, this roadway is no longer required.) D: Interior parcel previously not included in project-site area; now owned by applicant and included as part of project. E: Parcel originally included as part of project site, excluded from this plan, but included again as part of the current nine-unit project plan.

II.
GENERAL PLAN AND ZONING

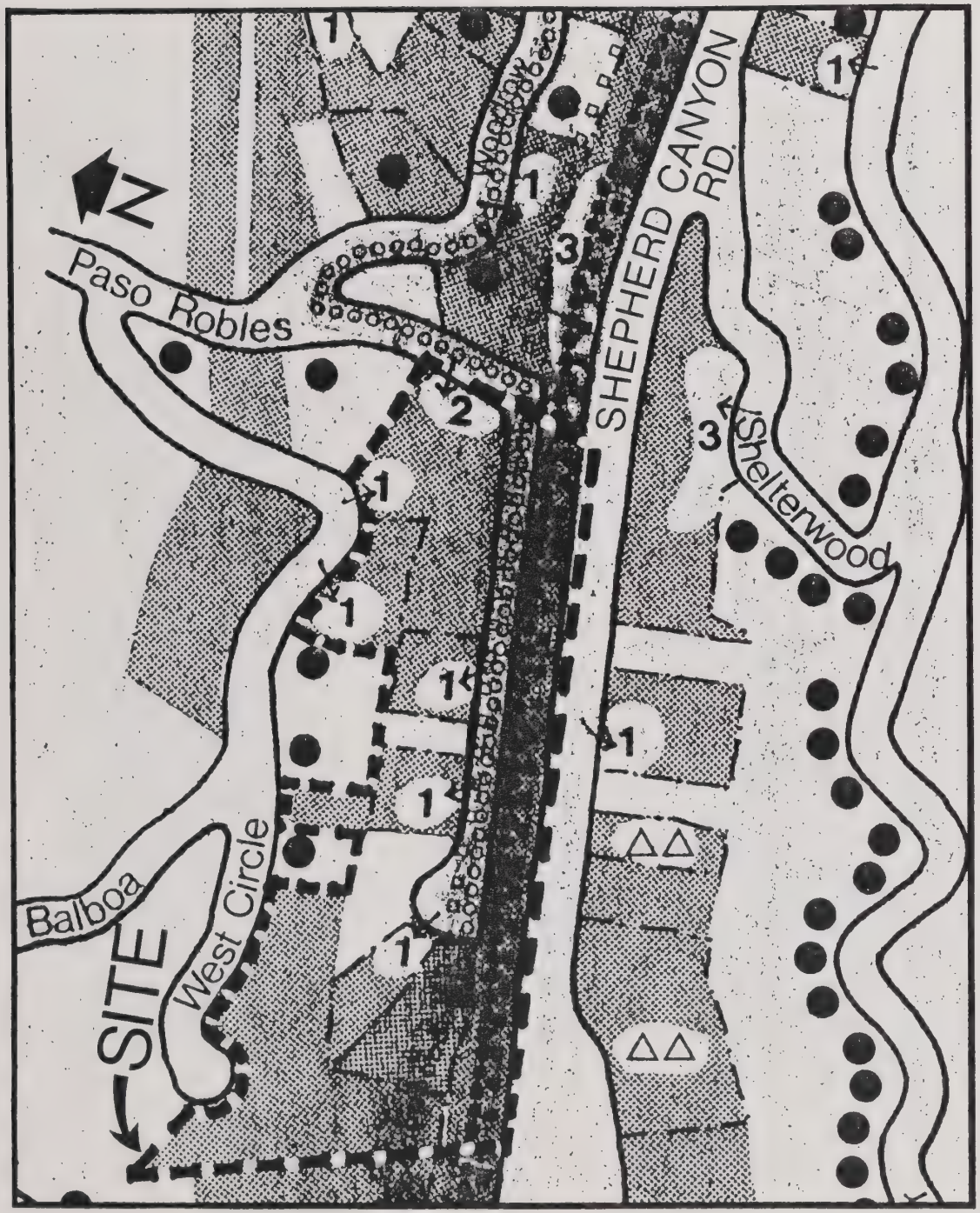
A. GENERAL PLAN

The Circulation Element of the Oakland Comprehensive Plan designates pedestrian and bicycle trail routes along the Shepherd Canyon corridor, and the Scenic Highways Element designates Shepherd Canyon Road as an official Oakland scenic route. In response to the scenic qualities of Shepherd Canyon, the City adopted the Shepherd Canyon Corridor Plan in 1975. This plan provides a set of development and design-review policies and guidelines, summarized as follows:

> *The character of low density development within Shepherd Canyon should be maintained to minimize damage and preserve the general feeling of openess.*
>
> *Buildings should be clustered wherever possible, to discourage excessive grading, erosion, and environmental damage and to preserve the general feeling of openness.*
>
> *Wherever possible, driveway access should be from streets other than Park Boulevard or Shepherd Canyon Road, to reduce potential congestion and traffic conflicts on the arterials.*
>
> *Building design and siting should respect and complement the surroundings.*
>
> *Pedestrian and bicycle trails should be developed within the Canyon, to complement the nearby trail systems of the City and the East Bay Regional Park District.*

Figure 13 shows a portion of the land use map of the Shepherd Canyon Corridor Plan, with locations of alternative trail routes along the old Sacramento Northern Railroad right-of-way and along the Park Boulevard right-of-way, designated open space areas, and allowable residential density on the project site as of 1975. The site has a complex history of ownership, with a large proportion of public ownership which has, over the years, been converted to private ownership. In 1975, designated density on the site was seven units in six "clusters." However, by 1984, when the original project EIR was prepared, allowable density had apparently reached 19 units (as originally proposed by the applicant) based on changes in ownership and the proposed abandonment of the Park Boulevard right-of-way, as follows:

Sale of former freeway right-of-way land, with deed restrictions on number of units:	7 units
Residential lots of record at time of R-30 to R-20 rezoning:	4 units
Railroad right-of-way purchased by applicant:	4 units
Park Blvd. right-of-way, if abandonment is approved and underlying title is clear:	2 units
PG&E land, less power-line right-of-way:	2 units
Total:	19 units


N
Paso Robles
Woodway
SHEPHERD CANYON RD.
Shelterwood
Balboa
West Circle
SITE
1
2
3
1
1
1

In the interval between submittal of the original 19-unit project plan and submittal of the current nine-unit plan, two project-site changes related to ownership have occurred: the applicant was unable to acquire the East Bay Park District parcel at the west end of the site, and that parcel was excluded from the project-site area in later plans; and an additional lot of record was acquired by the applicant (shown as parcel D on Figures 10 and 11).

When the original 19-unit project plan was submitted, the City made the determination that, because of the combination of the number of units proposed and the level of their encroachment into designated project-site open space, a General Plan amendment would be required in conjunction with project approval. However, with the current plan providing a substantial reduction in the number of units, and with reduced encroachment of units into the overall area of designated open space, the staff's position is that the plan should be considered in conformance with the land use designations of the Shepherd Canyon Corridor Plan.

B. ZONING

The project site is within the R-20 Low Density Residential Zone, which requires minimum lot areas of 12,000 square feet (roughly four units/acre) and maximum building height of 30 feet.

Because Shepherd Canyon Road is a designated scenic Route, the site is also within the S-10 Scenic Route Combining Zone (S-10 SRCZ), an overlay zone which requires design review for all new construction. The provisions of the overlay zone encourage cluster development, require conditional use permits for subdivisions, allow reductions in minimum site area in order to maximize quantity and continuity of open space along scenic routes, and encourage limited driveway access directly from the roadway. For approved projects within the overlay zone, an applicant must submit architectural and landscape plans for Planning Department review and approval prior to issuance of building permits.

C. ZONING CONFORMANCE

With more than 24,000 square feet of site area/unit, the project exceeds the minimum 12,000 square feet lot-area requirement of the R-20 district; and building heights are within the specified 30-foot maximum. (In accordance with PUD provisions, lot dimensions may be less than required for conventional subdivisions, and actual lot areas may be less than 12,000 square feet as long as overall development density does not exceed an average of more than one unit/12,000 square feet.)

D. REQUIRED PLANNING/ZONING APPROVALS

The several stages of required project review and approval will include 1) certification of adequacy of the draft and final EIRs; 2) a finding of project consistency with the General Plan; 3) review and approval of the project with regard to PUD requirements, the property-development standards of the R-20 zoning district, and subdivision regulations; and 3) design review and approval of the project, including landscaping, in accordance with the provisions of the S-10 Scenic Route Combining Zone. As noted above, subdivisions within the S-10 SRCZ zoning district also require the issuance of a conditional use permit.

III.
ENVIRONMENTAL INVENTORY

A. SERVICES AND UTILITIES

Gas, Electricity, and Telephone. These services are currently available to the project site. Although the project would contribute to long-term, cumulative demand, no significant impacts on these utilities would result from project development as proposed. (For scenic quality, the project's wire services, including cable TV, should be installed underground.)

Sewage Disposal (Fig. 5). The existing sewer system associated with the project site consists of an eight-inch line which drains southward along Paso Robles Drive, then westward along the Park Boulevard right-of-way, to the west end of the right-of-way, then southward to the main sewer line in Shepherd Canyon Road. A second eight-inch line, in the easement between proposed Lots 7 and 8, drains the residential area north of the site into the Park Boulevard line. Because most of the project units would be located above the existing sewer line in the Park Boulevard right-of-way, it is proposed that this line be abandoned and be replaced with a new line located in the proposed project street.

Although the project would contribute to long-term, cumulative increase in demand for sewer-service facilities, no significant treatment-plant or collection-system impacts would result from development as proposed. (Oakland Public Works Department, Engineering Services, July 19, 1988)

Water. East Bay Municipal Utility District water service is available to the project site from an existing main in Paso Robles Drive. Project development would require the extension of a water line onto the site, along the new project street, to serve individual units and a new fire hydrant. Although the project would contribute to long-term, cumulative demand, no significant water-service impacts are anticipated with development as proposed. (EBMUD, Water Service Planning, July 19, 1988)

Although EBMUD does not anticipate significant water-use impacts which can be attributed solely to the project, recurring drought conditions require consideration of general measures which can reduce traditional levels of water use for new development, including both domestic consumption and water use during construction. Methods for reducing long-term domestic use include landscaping with drought-tolerant plant species and installation of water-efficient irrigation systems, and the installation of water-conserving residential plumbing facilities. For construction procedures such as dust control and flushing of new sewer lines, recycled water should be used. (EBMUD provides regular advisory service regarding water-conserving plumbing facilities, landscaping, and construction practices.)

Police. Police services for the project area are provided by the Oakland Police Department. Although the project would contribute to long-term, cumulative demand, no significant impacts on the project-area's police services would result from development as proposed. (Oakland Police Dept., Planning Division, July 20, 1988) Although the project would not have significant police-services impact, the Police Department has recommended a number of development features which would enhance dwelling-unit security and thereby reduce cumulative demand for police services. These features are listed in the Police Department memorandum contained in Appendix E.

Fire Protection. Firefighting service is provided by the Oakland Fire Department. A first response to a fire at the project site, estimated at three minutes (assuming firefighters and vehicles at the station), would be by Engine 24, located at 6225 Moraga Avenue, in the Montclair commercial area. (Oakland Fire Department, Engine 24, July 20, 1988)

Due to heavy vegetative fuel-loading and steep slopes, the area of the project site is classified by the Oakland Fire Department as a critical fire-hazard area, for which the Department has great concern regarding vegetative clearance, roofing materials, building access, and firefighting water supply associated with new development. Project development would be required to conform to a number of fire-prevention standards, including fire-retardent roofs, vegetation clearance during construction, possible installation of "hard wired" smoke detectors, and availability of adequate firefighting water supply. In the immediate vicinity of the site, existing fire hydrants are located at the intersections of West Circle/ Balboa Drive, Woodrow Drive/Paso Robles Drive, and on Paso Robles drive approximately 200 feet north of Shepherd Canyon Road; and firefighting water pressure is adequate. With project development, it is anticipated that an additional hydrant will be required at the west end of the new project street. (Oakland Fire Department, Fire Protection Bureau, July 19, 1988)

Schools. Public schools serving the area of the project site are the following:

Grades K-6	Montclair Elementary School 1757 Mountain Boulevard
Grades 7-9	Montera Junior High School 5555 Ascot Drive
Grades 10-12	Skyline High School 12250 Skyline Boulevard

These schools have adequate enrollment capacities to accommodate the anticipated student population of the nine project units. Therefore, no significant public-school impacts are anticipated, although project development would contribute to long-term, cumulative demand for public school services and facilities. Although a service is available for handicapped students, the Oakland Public Schools do not provide regular school-bus service. (Oakland Public Schools, Administrative Offices, July 28, 1988)

B. AIR QUALITY

The project site is in an area with no major air-pollution problems, due to relatively light vehicle traffic and lack of nearby stationary pollution sources. The relatively few vehicle trips anticipated as a result of project development will not have significant impact on air quality, although they will make a minor, cumulative contribution to long-term increases in pollution of the overall air basin.

Dust control during construction is under the purview of the City, through standards specified in development regulations or otherwise imposed on construction procedures.

C. ARCHAEOLOGY

The lower elevations of the project site and the adjacent canyon-floor area were substantially disturbed by earthwork for construction of Shepherd Canyon Road and the Sacramento Northern roadbed. Compared to this, the earthwork proposed for the project is relatively minor. Therefore, it is not anticipated that project development would result in the discovery of any archaeological materials. However, if archaeological or paleontological finds are made during the course of project grading, work should be stopped until a qualified professional archaeologist can examine the site and recommend a program for recovery of the materials.

D. ENERGY

Development of the proposed project will involve direct use of energy for construction and indirect use for production of materials. Also, long-term energy input will be required for the operation of households and for operation and maintenance of utility facilities.

Based on a 20-year study period, the most substantial use of energy for the project will be for household operation (heating, cooling, lighting, appliance operation, etc.). This is estimated at approximately 41 percent of total, 20-year energy use. Transportation to and from the site will require an estimated 38 percent, and project construction will require about 16 percent. (See Appendix B for calculations of estimated energy inputs.)

The estimated 20-year level of energy consumption is not unusual for the level of development proposed. Therefore, it is not anticipated that the project will have significant impact on energy resources, although it will contribute to long-term, incremental demand. (Although the project is not expected to have significant energy-use impact, efforts should be made to limit long-term energy consumption. Appendix B contains a list of possible energy-conserving methods which should be considered in conjunction with final project design.)

E. TRAFFIC, CIRCULATION, AND PARKING

Existing Circulation

Shepherd Canyon Road. Shepherd Canyon Road is a two-lane arterial providing access to the project-site residential area from the Warren Freeway (Hwy. 13) and Mountain Boulevard, via Snake Road. East of the project site, Shepherd Canyon Road provides access to Pinehurst Road and Canyon Road, providing a route across the Oakland Hills into the Town of Morage, in Contra Costa County. This street has 60 feet of right-of-way width and, at the project site, 23 feet of pavement width.

Paso Robles Drive. Paso Robles is a two-lane residential street which intersects Shepherd Canyon Road at the southeasterly corner of the project site. The street right-of-way is 50 feet wide, and pavement width varies from about 20-25 feet near Shepherd Canyon Road to about 18 feet in the neighborhood to the north.

Park Boulevard Right-of-Way. The on-site, unimproved Park Boulevard public right-of-way is 35 feet wide and approximately 620 feet long.

Proposed Circulation Improvements (Figs. 5, 6)

Project Access. Proposed Lot 1, at the northeast corner of the site, would have access directly from Paso Robles Drive. Lots 2 through 9 would have access from a new project street, extending from Paso Robles Drive, parallel to Shepherd Canyon Road. This street would have approximately 440 feet of length (including a circular turnaround area), 24 feet of pavement width, cement-concrete curbs and gutters (not including sidewalks), and a 25-foot-radius turnaround area. The entrance to this street would be approximatly 60 feet north of Shepherd Canyon Road. (The maximum cul-de-sac length normally allowed under the provisions of the City's subdivision regulations is 300 feet. However, with the PUD review process, the City may allow longer cul-de-sacs. In the case of the proposed project, it is recommended that the additional cul-de-sac length be approved, because the proposed street is substantially shorter than the existing Park Boulevard right-of-way, and the moderate street length and roadway grade would not impair emergency-vehicle access.)

Shepherd Canyon Road Improvements. Project plans call for widening of Shepherd Canyon Road, just west of Paso Robles Drive, and provision of a painted left-turn lane to Paso Robles. This improvement, which was recommended in the original project EIR, would reduce traffic hazards at this intersection by providing left-turn storage outside of the eastbound Shepherd Canyon Road travel lane. (For this improvement, the project Tentative Map shows approximately 40 feet of planned pavement width. However, the exact dimensions of the street section would be established by the City's Public Works Department. A width of 34-36 feet would be sufficient to accommodate two 12-foot travel lanes and a turn lane with 10-12 feet of width. To the extent practical, the pavement widening should be on the south side of the street in order to minimize reduction of the area of project-frontage landscape screening on the north side of the street. Based on field observations and preliminary measurements, it appears that widening can be accommodated on the south side. Shepherd Canyon Road improvements should include selective clearance of low vegetation along the south side of the roadway to the east of Paso Robles Drive, to increase eastward sight distance for motorists turning left onto Paso Robles.)

Trail Circulation (Figs. 4-6)

Unused Trail Easement. Approximately in the middle of the project site, there is a north-south trail/sewer-line easement connecting Balboa Drive with the Park Boulevard right-of-way. This easement would be retained and would be extended to the north side of the proposed project street. (This easement is unimproved, and, for practical purposes, is nothing more than a utility easement. Because of the steep slope it traverses, it is improbable that it could ever be improved except as a long stairway.)

Proposed Trail. The proposed trail route approximates the alignment of the existing trail along the old Sacramento Northern right-of-way. This route would include a 20-foot-wide unimproved easement between the west site boundary and the west boundary of proposed Lot 9, a 12-foot-wide easement with an eight-foot-wide paved path between the west boundary of Lot 9 and the west end of the project street, and a public trail easement along the project street. (If the project is approved, the applicant should be required to pave the entire on-site length of the trail.) East of the project site, additional trail development is planned in conjunction with completion of the Shepherd Canyon Heights project.

All previous project plans have called for a trail alignment between the project street and the southerly site boundary, along the top of the embankment above Shepherd Canyon Road. However, use of the project street as a segment of the trail would limit the need to remove screening vegetation from the area above the roadway and would provide more area for supplementing this screening with new landscaping. Although a trail separated from the project street would be ideal, using the street for a segment of the trail seems to be a reasonable compromise, considering the practical difficulties involved in providing both a trail and adequate screening above Shepherd Canyon Road. The alternative of moving the project street and houses farther upslope is environmentally less attractive than the proposed roadway trail-use compromise. Although the use of a roadway as a portion of a trail presents some potential for vehicle/pedestrian conflicts, it is not an unusual situation along many major trails in the East Bay; and in the case of the proposed project, the combination of relatively moderate project traffic and a short roadway-trail segment would not be expected to result in significant hazards. (It should be noted that the existing project-site trail gate provides the only heavy maintenance-vehicle access to the Shepherd Canyon Bike Trail between Snake Road and Paso Robles Drive. Therefore, project development will have to accommodate continuation of such access.)

Existing Traffic

Figure 14 shows a.m. and p.m. peak-period traffic counts made at the Paso Robles Drive/Shepherd Canyon Road intersection on September 13, 1988. For the morning peak hour (7:15-8:15), Shepherd Canyon Road traffic was on the order of 600 vehicles, about 80% of which comprised the westbound commute. Peak-hour volume on Paso Robles Drive was about 80 vehicles, most of which were outbound to the west. For the afternoon peak hour (5:15-6:15), Shepherd Canyon Road traffic was on the order of 640 vehicles, about 70% eastbound; and Paso Robles volume was about 90 vehicles, about three-fourths of which were inbound, mostly from the west.

At the Paso Robles Drive intersection, sight distances are good for outbound turns onto Shepherd Canyon Road. For left turns onto Paso Robles, sight distance eastward along Shepherd Canyon Road is fairly good, but is somewhat restricted by vegetation on the south side of the roadway, along the inside of the long curve east of Paso Robles Drive. During the EIR traffic counts, no significant peak-hour congestion was observed at the Paso Robles Drive intersection.

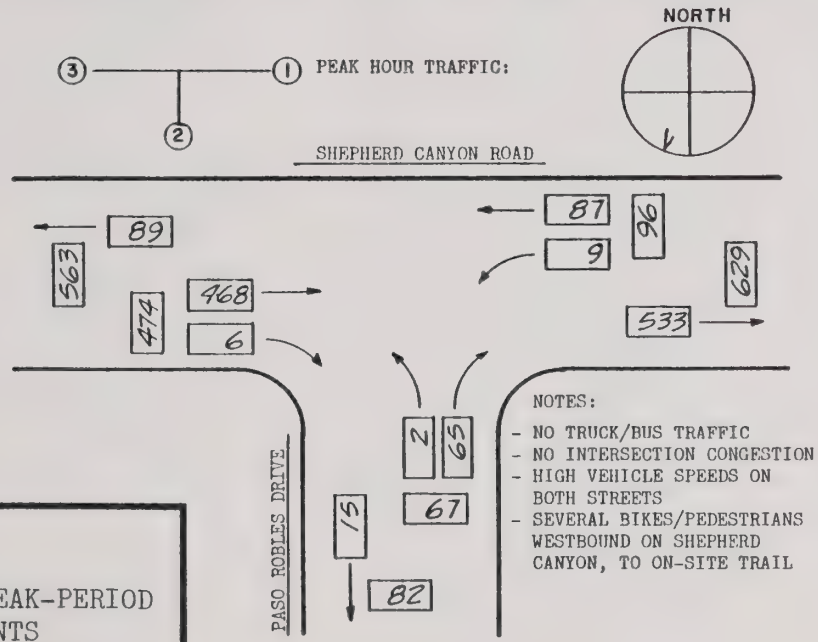
Project Traffic

Based on a factor of 12 trips/day/unit, the project would generate 108 trips/day (54 round trips). Assuming a fairly high peak-hour generation of 1.5 trips/unit, the project would generate 14 trips during each peak hour, or an average of about one vehicle each 4½ minutes, with most morning trips outbound and most afternoon trips inbound. With 108 trips/day and a total of 28 peak-hour trips, the project would generate 80 off-peak daily trips (40 round trips). Assuming that all 80 of these trips would occur during the nine-hour period between the morning and afternoon peak hours, the average would be about nine vehicles/hour during the off-peak period. These volumes of peak and off-peak project traffic would not result in significant congestion or traffic-hazard impact.

LOCATION SHEPHERD CANYON ROAD/PASO ROBLES DRIVE

DATE 9-13-88 **TIME** 7-9 AM **PEAK HOUR** 7:15-8:15 **PEAK TOTAL** 637

TIME	① S	① L	② R	② L	③ S	③ R	TOTAL
7:00	4	4	5	1	81	–	95
15	16	2	14	–	109	1	142
30	21	3	17	2	120	2	165
45	24	2	17	–	130	2	175
TOTAL	65	11	53	3	440	5	577
8:00	26	2	17	–	109	1	155
15	20	1	8	–	85	–	114
30	25	1	14	–	85	–	125
45	38	2	13	–	75	–	128
TOTAL	109	6	52	–	354	1	522
ALL TOTAL	174	17	105	3	794	6	1099
PEAK HOUR	87	9	65	2	468	6	637



LOCATION SHEPHERD CANYON ROAD/PASO ROBLES DRIVE

DATE 9-13-88 **TIME** 4:30-6:30 PM **PEAK HOUR** 5:15-6:15 **PEAK TOTAL** 649

TIME	① S	① L	② R	② L	③ S	③ R	TOTAL
4:30	68	6	5	–	43	1	123
45	84	11	5	–	35	–	135
5:00	86	3	7	1	38	–	135
15	93	13	6	–	42	–	154
TOTAL	331	33	23	1	158	1	547
5:30	92	17	4	–	50	2	165
45	103	19	4	2	33	3	164
6:00	101	17	5	1	41	1	166
15	77	9	4	1	37	3	131
TOTAL	373	62	17	4	161	9	626
ALL TOTAL	704	95	40	5	319	10	1173
PEAK HOUR	389	66	19	3	166	6	649

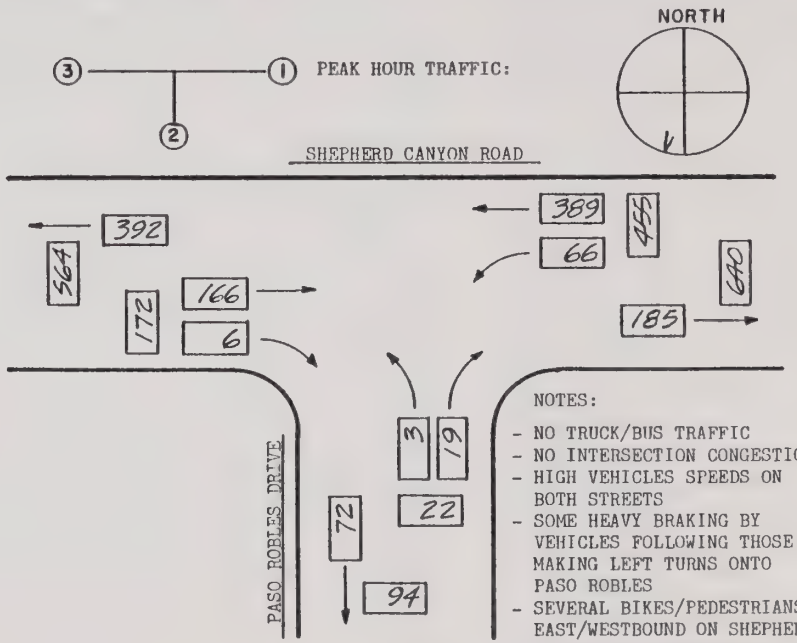


Figure 14.

AM AND PM PEAK-PERIOD TRAFFIC COUNTS

Proposed Parking (Fig. 6)

Proposed parking is two garage spaces/unit, plus two driveway spaces for the unit on Lot 9 (the only driveway, along the private street, which is long enough for parking), plus 11 perpendicular parking-bay spaces (three of which are compact-car size), for a total of 31 off-street spaces, an average of 3.4 spaces/unit. (Two of the 11 parking-bay spaces are for the exclusive use of proposed Lot 1, on Paso Robles Drive.)

Although two garage spaces/unit are consistent with City requirements for single-family residential development, and an average of 3.4 off-street spaces/unit would be a good ratio in a conventional single-family subdivision (where it could be expected that one or two on-street spaces would be available in front of each unit), the proposed parking scheme has the potential to result in unplanned, overflow parking along the private project street, which would result in congestion and a decrease in street width inconsistent with the need for unobstructed 20-foot-wide emergency-vehicle access. It is common for residents of single-family units to use one or both of their garage spaces for non-vehicle storage, and to park their vehicles in their driveways or on the street in front of their houses. It can be expected that, to some extent, this will also be the case with the proposed project. Because most of the units do not have driveways which can accommodate parking, there will probably be substantial competition for the proposed parking-bay spaces, which will periodically--if not regularly--result in resident and guest parking along the south side of the private street, notwithstanding any parking regulations to the contrary.

The potential for such parking problems could be mitigated by provision of parallel parking bays along the south side of the private street, as proposed in previous project plans (see Figs. 10-12, beginning on p. 15). Although such a recommendation may seem inconsistent with the need to provide adequate vegetative screening along the strip of land between the private street and Shepherd Canyon Road, relocation of the project-site trail alignment onto the street has left this strip with sufficient depth to accommodate both parking and screening. At its shallowest point, this strip has about 24 feet of depth which, with eight-foot-wide parking bays, would leave a minimum of about 16 feet of depth for landscaping. (Assuming 21-23 feet of length for each parallel-parking-bay space, the south side of the street could easily accommodate eight spaces, one for each of the private-street units which does not have driveway parking, in a series of two-space bays with intervening landscaped areas.)

F. NOISE

A thorough noise study was prepared for the original project EIR (Edward L. Pack Associates, Inc., Consulting Acoustical Engineers, "Environmental Noise Assessment Study for the Planned Single-Family Residential Development, Shepherd Canyon Road and Paso Robles Drive, Oakland," May 4, 1984; contained in Appendix F of the June, 1984 Draft EIR). This study concluded that, for the then-proposed project, Shepherd Canyon Road traffic noise would be within recognized standards at the exteriors of the units but would somewhat exceed standard levels for unit interiors. Based on this assessment, noise-attenuating glazing was recommended for windows facing the roadway. Because the locations of the proposed units are essentially the same as those which were the subject of the 1984 noise study, the conclusions of the 1984 study are still applicable, and the previously-recommended mitigation is included in the impact-mitigation section of this EIR (see p. 57).

G. GEOLOGY AND GRADING

Regional Geology

The site is located in the Coast Ranges geomorphic province, an area which is characterized by steep-sided northwest-trending ridges and valleys. The bedrock in this province has been tightly folded and is cut by both active and inactive faults. Geologically, the ridges and valleys of the Coast Ranges are quite young, and there is evidence that uplift is on-going. Landslides and other slope-stability problems are pervasive, but vary substantially in intensity, depending on climate, topography, bedrock geology, and other local factors.

Bedrock Geology

The 1984 Draft EIR provided an overview of bedrock geology on the project site. Briefly summarized, the most recent published geologic map of the Shepherd Canyon Road area is that of the U.S. Geological Survey (Radbruch, 1969), which indicates that the site is underlain by marine sandstone of late Cretaceous (Kr) and early Tertiary (Tss) ages, which have been tightly folded and faulted (Fig. 15). The Redwood Canyon Formation (Kr), which outcrops in the southern portion of the site, consists chiefly of fine- to medium-grained sandstone with interbedded siltstone. The text accompanying the USGS map indicates that weathered sandstone is generally firm, and weathered siltstone is crumbly.

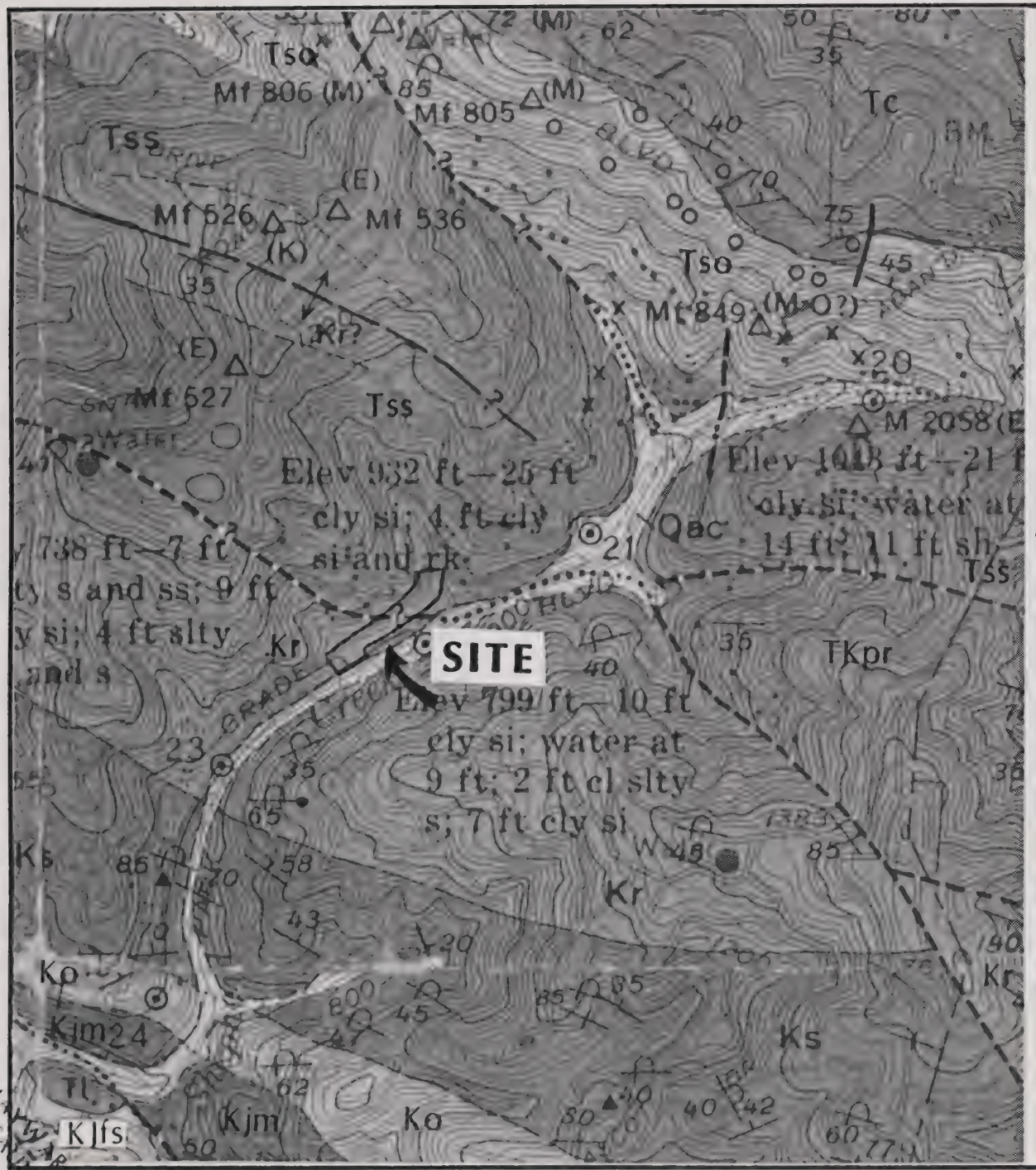
The eastern portion of the project site is underlain by an unnamed, massive, fine-grained sandstone with associated dark-colored clay shale (Tss). Figure 15 indicates that the contact of the two geologic formations is faulted. This unnamed fault is not considered active by either the USGS or the California Division of Mines and Geology (CDMG). However, even inactive faults can have effects on slope stability, and they tend to be zones of springs and groundwater seepage.

By extrapolation from nearby measurements, bedding on the project site can be inferred to strike east-west, with dips consistently to the south at 35 to 65 degrees. The orientation of the dominant joint sets is not known.

Hayward Fault

The Hayward fault zone comprises a northwest-trending zone of faults along the western front of the hills bordering the east side of San Francisco Bay. The fault zone can be traced nearly continuously northwestward from the Warm Springs district in southern Alameda County to San Pablo Bay at Point Pinole in Contra Costa County. It cannot be traced south of Warm Springs with any degree of certainty. Southeast of the San Franciso Bay area, the Hayward fault is inferred to merge with the Calaveras fault in the vicinity of the Calaveras Reservoir. Movement along faults within this zone has caused two major historic earthquakes, one in 1836 and one in 1868. Rupture surfaces were opened between San Pablo and Mission San Jose in 1836, and between Mills College and Warm Springs in 1868. Faulting was reported as far north as the University of California, Berkeley, in the 1868 earthquake.

Tectonic creep was first recognized on the Hayward fault in 1960, and since then has been observed at various places along its length, from San Pablo to Fremont.



EXPLANATION

Qac	Alluvium and Colluvium
Tl	Leona Rhyolite
Tc	Claremont Shale
Tso	Sobrante Formation
Tss	Sandstone and Shale
TKpr	Pinehurst Shale and Redwood Canyon Formation (predominantly Redwood Canyon Fm, with minor amounts of Pinehurst Shale too small to show on map)
Kr	Redwood Canyon Formation
Ko	Oakland Conglomerate
Kjm	Joaquin Miller Formation (shale, sandstone, and minor conglomerate)
KJfs	Franciscan Formation Sandstone and Shale

Geologic contact (dashed where approximate, queried where uncertain)

85 Strike and dip of bedding

Fault (short dash where inferred, long dash where approximately located, queried where probable, dotted where concealed)

Source: Radbruch 1969

N

USGS GEOLOGIC MAP

SCALE: 1" - 1000'

DATE: 9-21-88

FIGURE 15.

Darwin Myers Associates

JOB NUMBER: 1011.88

The fault has cracked and offset curbs, streets, fences, railroad tracks, pipelines, and buildings. All creep movement appears to be right lateral. Traces within the zone of faulting are, in some places, clearly delineated by physiographic features such as sag ponds, trenches, scarps, and offsets. In other places, such evidence is very faint, even in areas where it is known from historic records that surface faulting took place.

A review of existing seismic records provides compelling evidence that the Hayward fault is seismically active. For example, the earthquake epicenters recorded by the U.S. Geological Survey during the period 1969 through mid-1982 show a good correlation between earthquake epicenters and known active faults, including the Hayward fault (Fig. 16). These epicenters are evidence of adjustments taking place at depth along active Bay Area faults. In a typical year, 20 or more seismic events are recorded by the USGS in the immediate vicinity of the Hayward fault.

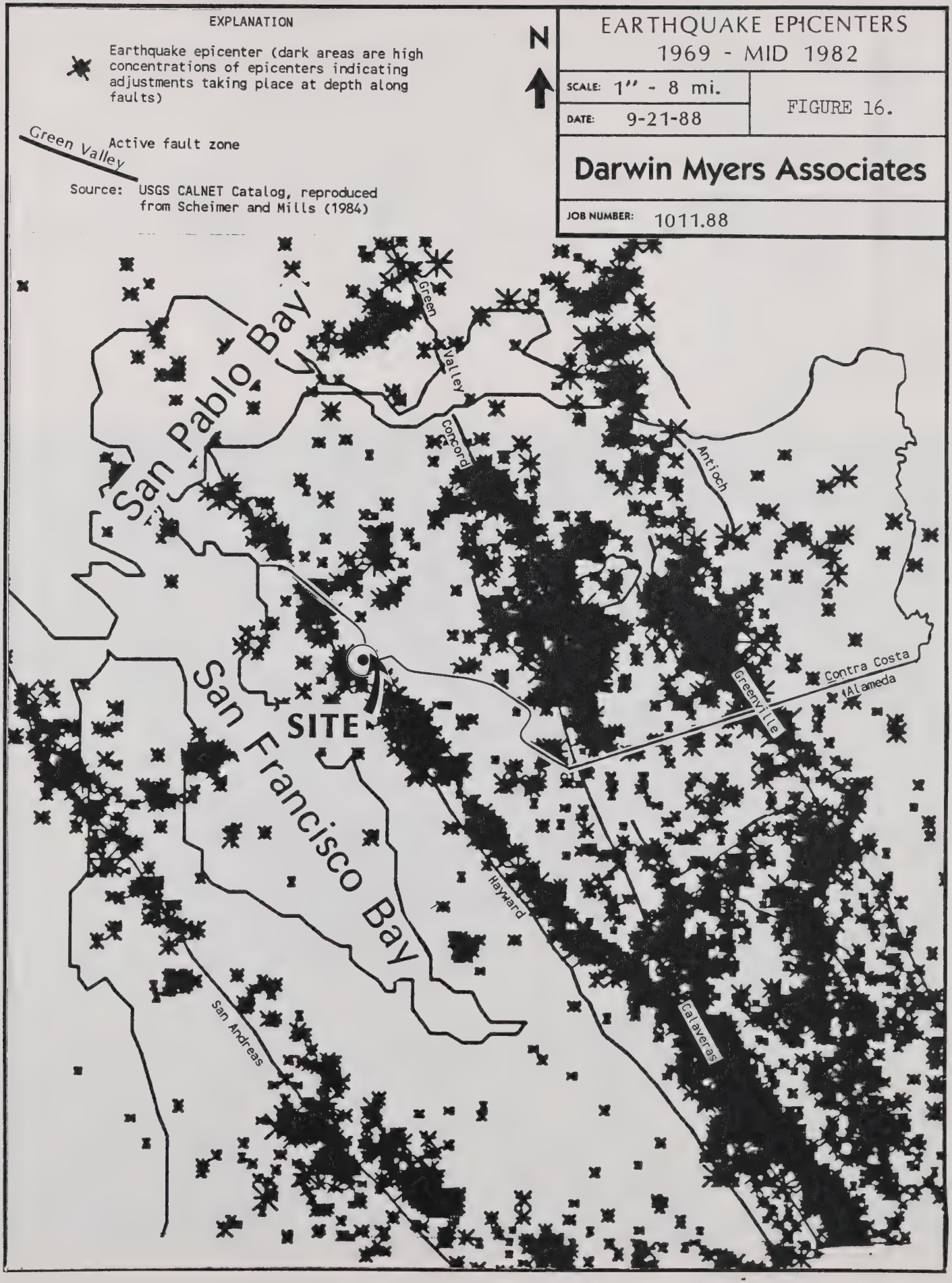
Seismicity

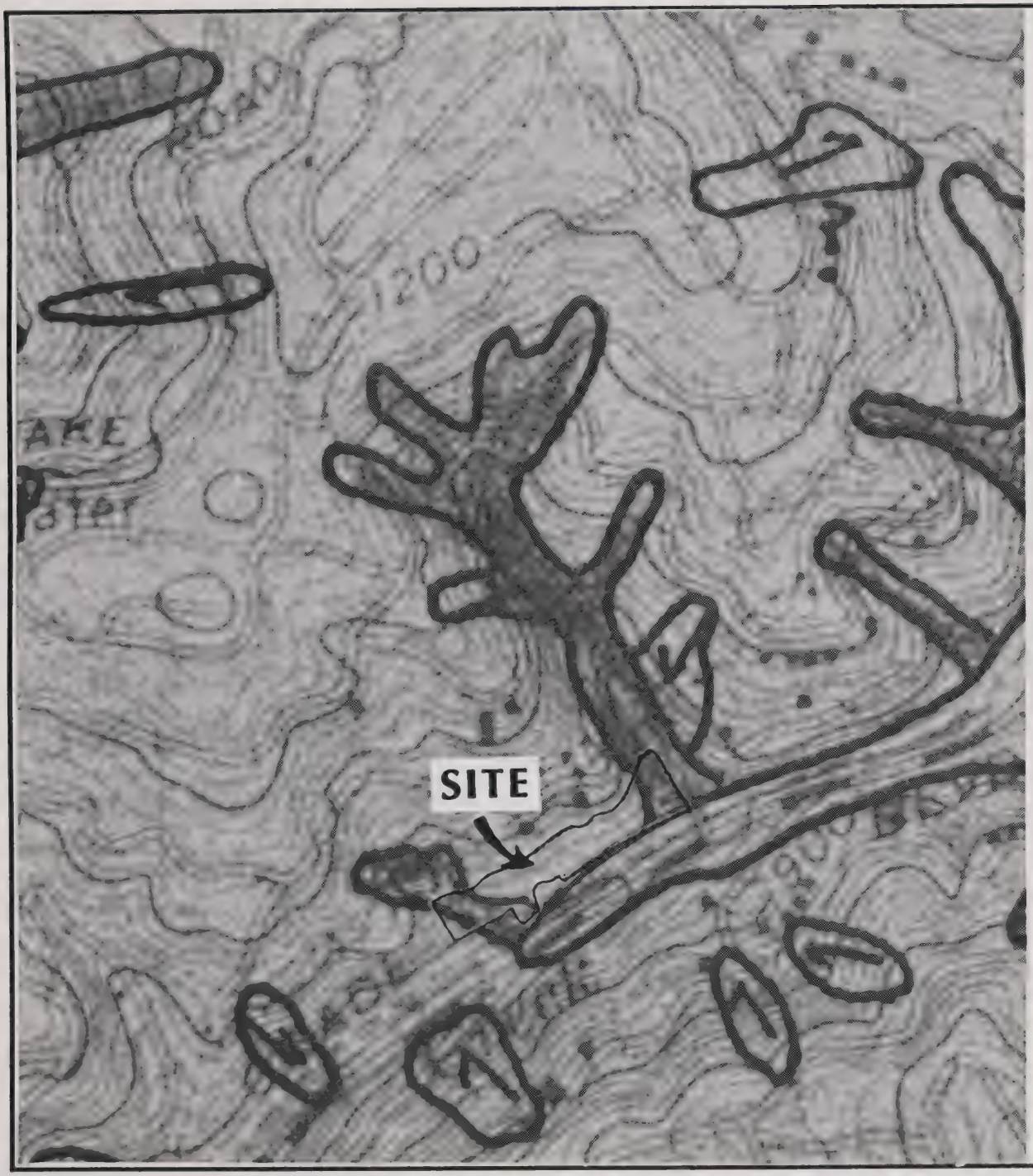
Published maps indicate that the Hayward fault passes 3,400 feet southwest of the project site, far enough that surface fault rupture is not a hazard. Nevertheless, the site, along with other properties in the Oakland hills, is close enough to the fault to be subject to damage from earthquake shaking. Other active fault systems which are near enough to produce earthquake-related damage in the Oakland hills include the San Andreas and Calaveras faults. The San Andreas passes approximately 18 miles southwest of the project and the Calaveras passes approximately 12 miles to the east. Due to the location of the site within a region of high seismicity, it can be anticipated that it will be subject to the effects of at least one high-magnitude earthquake during the useful life of the proposed dwelling units.

According to a report issued by the Association of Bay Area Governments (Perkins, 1982), the property would undergo "strong" to "very strong" groundshaking (San Franciso intensities D to C, respectively) in the event of a Richter magnitude 6.9 earthquake originating on the Hayward fault. This corresponds to Modified Mercalli intensities in the range of VII to VIII, respectively. At these intensities, even modern wood-frame units conforming to the current requirements of the Uniform Building Code would be subject to damage. The dollar cost of such damage can be estimated by using statistical studies of past earthquakes. Specifically, the "damage cost factor" for wood-frame houses exposed to "very strong" groundshaking is five percent. Thus, a unit valued at $200,000 would experience, on average, $10,000 in damage. However, the April, 1984 earthquake on the Calaveras fault is a reminder that damage can be much greater, particularly if an earthquake triggers ground failure or fire. (The "damage cost factor" is equal to the cost of repair divided by the replacement cost. This quotient is multiplied by 100 to express the result as a percentage.)

Landslides and Slope Stability

The USGS has prepared photo-interpretive landslide maps of the entire San Francisco Bay Region (Nilsen, 1975). According to the map of the Oakland East Quadrangle, the extreme northeast and southwest corners of the project site are mantled by colluvial deposits (slopewash and alluvial fan deposits). No landslides are mapped on the site, but eight landslides are mapped in the general vicinity (Fig. 17).


EXPLANATION
Earthquake epicenter (dark areas are high concentrations of epicenters indicating adjustments taking place at depth along faults)
Green Valley
Active fault zone
Source: USGS CALNET Catalog, reproduced from Scheimer and Mills (1984)
N
EARTHQUAKE EPICENTERS
1969 - MID 1982
SCALE: 1" - 8 mi.
DATE: 9-21-88
FIGURE 16.
Darwin Myers Associates
JOB NUMBER: 1011.88
San Pablo Bay
Green Valley
Concord
Antioch
SITE
San Francisco Bay
Greenville
Contra Costa
Alameda
Hayward
Calaveras
San Andreas



EXPLANATION

Photointerpretive Landslide

Photointerpretive Colluvial Deposit

SOURCE: Nilsen 1975

N

USGS PHOTOINTERPRETIVE LANDSLIDE MAP	
SCALE: 1" - 500'	FIGURE 17.
DATE: 9-21-88	
Darwin Myers Associates	
JOB NUMBER: 1011.88	

The Nilsen maps are sometimes criticized because they are based solely on interpretation of 1960's photography. Slides occurring in the 1970's and 1980's are not shown, and the slides which are shown have not been field-checked by the USGS. The slides are not classified by activity status, depth of slide plane, or type of slide deposit. Nevertheless, the map serves its intended function of "red flagging" areas requiring specific study.

In 1979, the USGS released a relative-slope-stability map of the San Francisco Bay Region, at a scale of 1:125,000 (approximately 1" = 2 mi.). In preparing the map, the USGS used three parameters--slope steepness, bedrock geology, and presence and abundance of landslides. Information on slopes was provided by a USGS slope map, and information on bedrock geology and slides in the vicinity of the project was based on the mapping of Radbruch and Nilsen, respectively. Figure 18 presents the USGS Relative Slope Stability map of the project site and vicinity, at a scale of 1" = 4,000'. This map places the site in Category 4 (moderately unstable). Some nearby hillside areas are in Category 5 (unstable). In general, this indicates that the bedrock units on the site and in the surrounding area are susceptible to landsliding and erosion, especially if earthwork is not sensitive to geologic conditions.

Grading

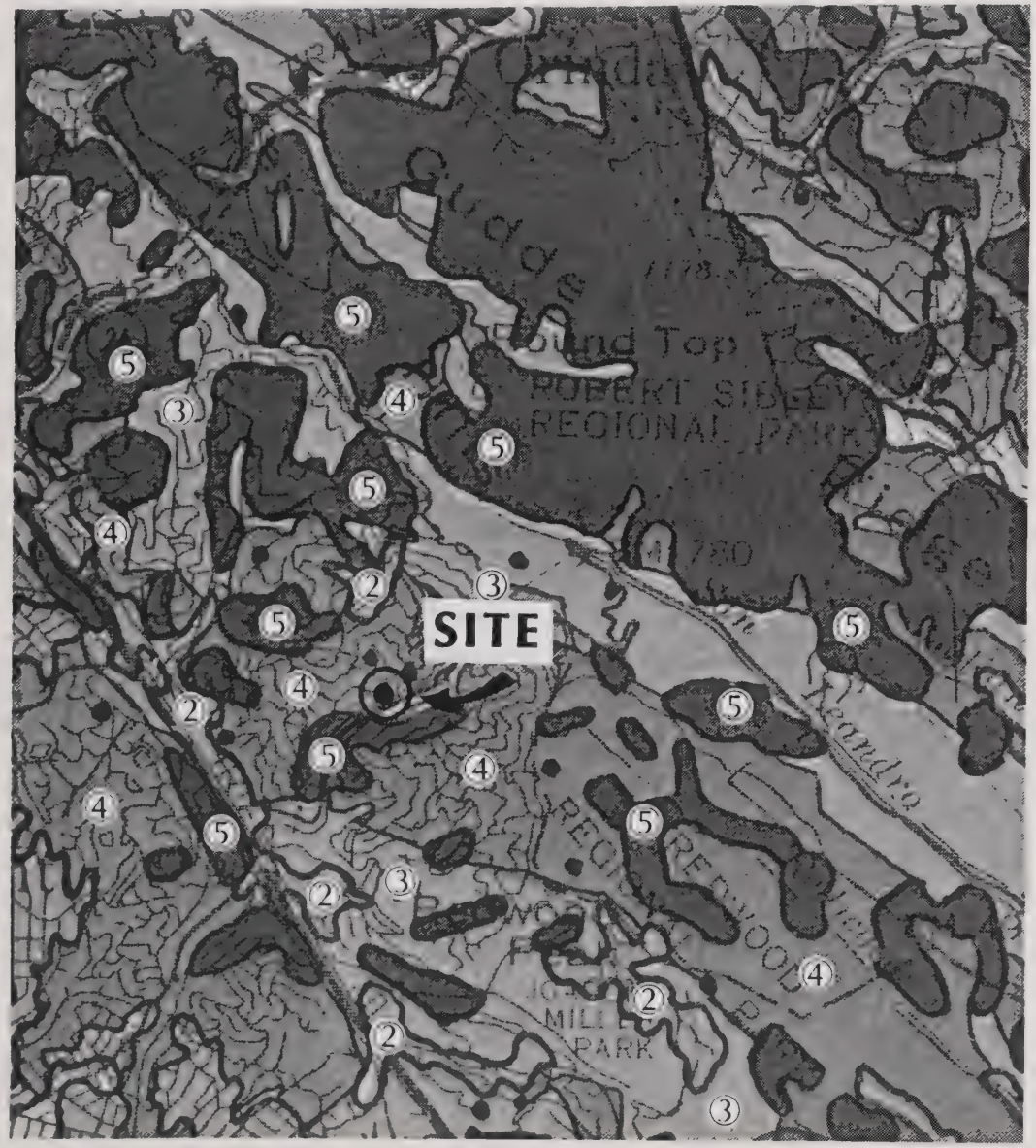
For the original 1984 project plan (Fig. 10), grading would have been required over a fairly broad area of the site, including continuous foundation grading all along the area of the proposed street and into the creek area at the west end of the street; sufficient grading at the upper elevations of the site to accommodate street widening and retaining-wall construction for units along West Circle and Balboa Drive; and grading on the cut-slope embankment above Shepherd Canyon Road at the west end of the site, to accommodate the proposed trail. With the current plan, the applicant's intention is to limit grading to the foundation area of each unit, and roadway and drainage construction. The rear foundation wall of each unit would serve as a retaining wall. The only corrective earthwork proposed is construction of concrete retaining walls and subdrains across the two slides shown on Figure 19, along with removal of slide debris downslope from the walls.

Previous Investigations

In 1984, Darwin Myers Associates (DMA), the geologic consultant for the original EIR, performed subsurface exploration of the project site. In 1988, Geo/Resource Consultants, Inc. was retained by the applicant to do further studies and provide recommendations for earthwork and foundation design, based on a 13-unit plan for site development (Fig. 19B).

Darwin Myers Associates. The 1984 DMA investigation included the excavation and logging of 12 exploratory test pits. The purpose of this study was to provide a basis for evaluating geologic hazards and confirming/modifying the interpretations shown in published maps. This study also provided a context within which the then-proposed 19-unit development could be evaluated.

The subsurface investigation allowed DMA to describe the rock types and strata in more detail than could be obtained from published maps, and provided site-specific



SYMBOL	DESCRIPTION
2	Generally stable. (5-15% slopes; not underlain by landslides)
3	Generally stable to marginally stable (>15% slopes; bedrock not susceptible to landsliding)
4	Moderately unstable. (>15% slopes underlain by bedrock units susceptible to landsliding)
5	Unstable. (Areas underlain by or immediately adjacent to landslide deposits)

SOURCE: Nilsen, et al, (1979)

N

USGS RELATIVE SLOPE STABILITY MAP

SCALE: 1" - 4000'

DATE: 9-21-88

FIGURE 18.

Darwin Myers Associates

JOB NUMBER: 1011.88

(A) CURRENT SITE PLAN

PERMANENT OPEN SPACE
TO BE CONVEYED TO NEW OWNER AS NOTED

Existing House

Permanent Open Space

Existing Houses

PERMANENT OPEN SPACE
TO BE CONVEYED TO NEW OWNER AS NOTED

PERMANENT OPEN SPACE

East Bay Regional Park

Bicycle Path

PASO ROBLES DRIVE

SHEPHERD CANYON ROAD

A A

B B

(B) GRC GEOLOGIC MAP

BALBOA DRIVE

HIGHLANDS

MONTCLAIR

TKss

Qc

Ql

Ts

Qaf

Approximate locations of retaining walls and subdrain installations

ABANDONED SAN FRANCISCO - SACRAMENTO RAILWAY RIGHT OF WAY

PASO ROBLES DRIVE

SHEPHERD CANYON ROAD

B B Line of section (see Fig. 9, p. 12)

Qaf	Artificial fill along old railroad grade
Qc	Relatively deep colluvial soils (estimated depth greater than 5 feet) showing evidence of downhill creep
Ql	Potential landslide areas. Evidence of minor slumping at toe
Ts	Blocky sandstone of presumed early Tertiary age
TKss	Undifferentiated Tertiary and Cretaceous siltstone and sandstone. Thin-bedded, closely fractured

Geologic contact

Fault. Dashed where inferred, queried where uncertain

60 Strike and dip of bedding

60 Strike and dip of joints

60 Strike and dip of partings

Contour lines showing depth to bedrock within area proposed for building

TP - 10 Test pit excavated by Geo/Resource Consultants

DMA - 12 Test pit excavated by Darwin Myers Associates

B - 7 Boring logged by Geo/Resource Consultants

CURRENT SITE PLAN
GRC GEOLOGIC MAP

SCALE: 1'' - 80'

DATE: 9-21-88

FIGURE 19.

Darwin Myers Associates

JOB NUMBER: 1011.88

information on the orientation of bedding, location of highly-fractured rock, and bedrock hollows. (This information is presented in the 1984 Draft EIR, pp. 27-29.) Briefly summarized, DMA's findings were that the mapping of the USGS was substantially correct, that the site was chiefly underlain by sandstone bedrock, and that nearby cut slopes were performing satisfactorily. Slopewash deposits were mapped in three bedrock hollows, the locations of which agree with the mapping of Qc on the geologic map prepared by Geo/Resource Consultants (Fig. 19B).

Geo/Resource Consultants. GRC performed a comprehensive subsurface investigation that included the logging of 11 test pits which ranged up to 13 feet in depth, and the drilling of seven borings, up to 25 feet in depth. The primary product of the GRC study is the original geologic map shown as Figure 19B. This map identifies three bedrock hollows which are partially filled with colluvium. Two of the hollows also contain small landslides that are classified as slumps. The areas covered by these slides are approximately 1,500 and 2,000 square feet. (The applicant's geotechnical study, entitled "Geological/Geotechnical Investigation, Shepherd Canyon Residences," April, 1988, by Geo/Resource Consultants, Inc., is included by reference in this EIR. The report is available for public review at the office of the Planning Department, Oakland City Hall.)

Bedrock Geology. GRC recognizes two formations on the project site and maps two inactive faults. The bedrock in the eastern area of the site is described as relatively erosion-resistant, blocky sandstone (Ts). Bedrock on the remaining area of the site is described as highly-fractured, thin-bedded siltstone with occassional interbedded sandstone (TKss). These rocks are considered to be more erodable than Ts.

GRC indicated that they found no direct field evidence for the western fault; its location is based chiefly on the mapping of Radbruch (1969). They did see some evidence for the eastern trace, in an existing cut slope on Balboa Drive. According to GRC, if either of these traces exist, they are likely to be defined by a narrow zone of sheared, very weak rock.

Surficial Deposits. GRC indicates that the colluvial deposits in the bedrock hollows range up to nine feet in thickness. A number of old Monterey pines on the site are leaning, indicating that these areas of the site are experiencing soil creep. GRC reports that there are no significant active landslides on the site, but that there is evidence of minor slumping. The slumping has resulted from the combined effects of 1) grading of the old railway road-bed, which created a cut slope in colluvium, 2) concentrated runoff (and groundwater) in the colluvium-filled bedrock hollows, and 3) the greater-than-normal depth to bedrock in the hollows.

Conclusions. GRC concluded that the proposed project is feasible, and that planned development poses no unusual geologic or soil problems. The following hazards were identified:

Pine Trees. Old, leaning Monterey pines are hazardous to planned development, and should be removed.

Slump Areas. The two slump areas should be stabilized when the site is developed. GRC recommends retaining walls with sub-drains.

GRC Recommendations. The GRC report provides standards and criteria to guide site grading, drainage and foundation design, erosion control, plan review, and construction observation. (These recommendations are contained in Appendix C.)

H. DRAINAGE

Existing Drainage (Fig. 20)

Shepherd Canyon Road Pipe. The original Shepherd Canyon Creek has been replaced by a large storm drain under Shepherd Canyon Road. In the area of the project site, this pipe increases in size from 39 inches upstream, to 54 inches along the site frontage, to 60 inches downstream. Downstream, the 60-inch pipe flows into a creek west of Shepherd Canyon Park. From there, runoff flows under Highway 13, near the Park Boulevard interchange, then southwest along Sausal Creek in Dimond Canyon.

On-Site Overland Flow. Across most of the site, storm runoff flows over the ground surface toward Shepherd Canyon Road. This flow includes runoff from the four existing houses on West Circle and Balboa Drive, along the northerly site boundary.

Creek Channel. Existing drainage improvements are limited to an 18-inch concrete pipe in the drainage swale at the west end of the site, and a headwall about 125 feet up the swale from Shepherd Canyon Road, at the inlet to the pipe. The headwall and upper-elevation portion of the pipe are located on East Bay Regional Park District property, but the pipe collects runoff from the upper part of the project site, and the lower-elevation portion of the pipe crosses a portion of the site. This pipe discharges onto the north shoulder of Shepherd Canyon Road, and runoff then flows westward down the roadway shoulder, about 80 feet, to a catch basin and 12-inch pipe, which is connected to the large storm drain under the roadway.

Drainage Above the Project Site. A pipe crossing Balboa Drive, at the West Circle intersection, collects runoff from west Balboa Drive and discharges it onto West Circle, from which it flows into the creek at the west end of the project site. Runoff from east Balboa Drive and from Paso Robles drive is conveyed down Paso Robles to the large storm drain under Shepherd Canyon Road.

Proposed Drainage System (Fig. 5)

The proposed drainage system consists of the following:

1. A concrete ditch behind the project units, to collect overland flow from the upper area of the site. This ditch would extend from the area behind proposed Lot 1, westward, to the existing headwall of the concrete pipe on the East Bay Park property.
2. A storm drain under the north side of the project street, which would drain westward to the cul-de-sac turnaround area, then southward to the large storm drain under Shepherd Canyon Road.

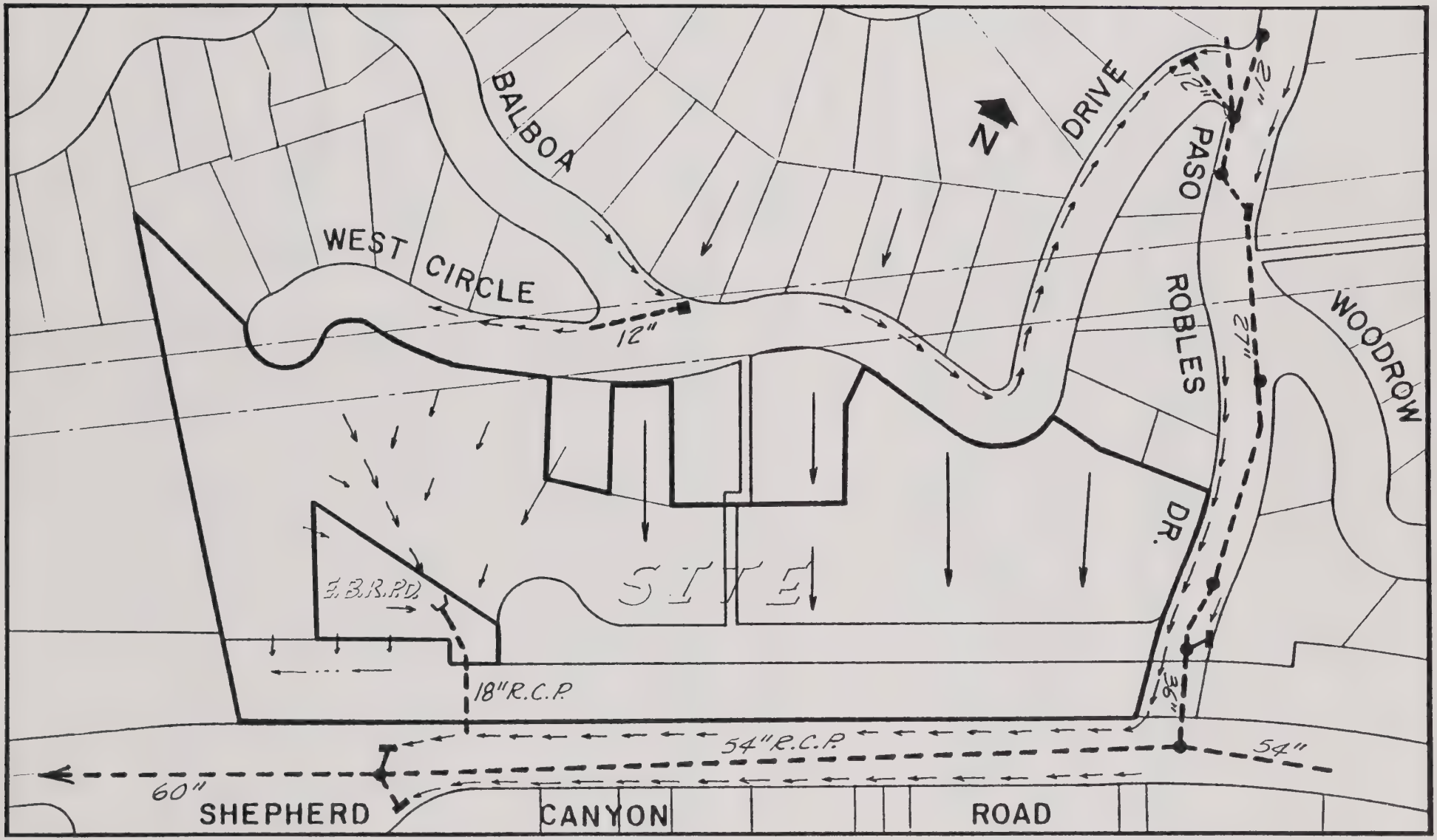


Figure 20. EXISTING DRAINAGE AT PROJECT SITE Approx. Scale: 1" = 140'

Drainage system facilities from field investigation and City Public Works map 1509B488. Arrows show overland flow across the site and along roadways.

3. A storm drain, between proposed Lots 6 and 7, connecting the interceptor ditch with the storm drain in the project street.

4. Drain lines from each residential lot to the storm drain in the project street.

No information has been provided regarding pipe sizes, nor are there any details relating to foundation and retaining-wall drainage, or collection of roof water. However, the applicant's geotechnical consultant has made recommendations for retaining-wall subdrains and the collection of runoff around individual building sites (Appendix C).

Project Runoff. Based on the original project proposal, the 1984 Draft EIR contains runoff calculations (Appendix C of that EIR) indicating that no significant downstream drainage impacts would be anticipated with the increased rate of peak storm-runoff from 19 units. With the current proposal, involving less than half the number of units originally proposed, and less street and trail surface area, it is still anticipated that project development will not result in significant impacts on the downstream drainage system.

I. VEGETATION AND WILDLIFE

Vegetation

(The overall vegetative character of the project site is shown in Figures 22 through 30, beginning on page 44, in the Visual Characteristics section.)

Mixed Coniferous/Hardwood Woodland. About one-third to one-half of the site is covered by a nearly pure stand of eucalyptus, which dominates the upper, central slope of the site. These trees are from 40 to 60 feet in height and have diameters of eight to 12 inches. These eucalyptus appear to be almost exclusively second-growth trees which have sprouted and developed since 1973, when most of the site's eucalyptus were cut down in response to potential fire hazard from freeze damage. A number of mature Monterey pines and Monterey cypress are scattered among the eucalyptus stand and along the lower slope of the site. The understory within the eucalyptus stand is quite sparse due to dense shade and an accumulation of plant litter.

The westerly area of the site has a mixture of Monterey pine, Monterey cypress, coast live oak, eucalyptus, alder, madrone, bay, and northern coastal scrub. Along the eastern edge of the site, there is a narrow band of coast live oak, Monterey pine, and Monterey cypress bordering the eucalyptus thicket.

Northern Coastal Scrub. Intermixed with the coniferous/hardwood community are patches of northern coastal scrub, dominated by blackberry, poison oak, and coyote brush (Baccharis). This plant community is found predominately in the western area of the site, mixed with the open stands of pine, cypress, and hardwoods. Along the north edge of the old railroad right-of-way, between the trail and the eucalyptus thicket, there are patches of this vegetation type, mixed with alders. The northern coastal scrub is also found along the frontage of Shepherd Canyon Road, interspersed with coast live oak. A few elderberry shrubs of various sizes are associated with the coastal scrub.

Riparian. The intermittent stream channel which drains onto the site from the northwest has a dense cover of blackberry. Along the lower reach of the channel, French broom and patches of bracken fern and grasses (sp.) are associated with the blackberry. Scattered bay and alder trees are found along the upper reach of the channel, and there is a narrow band of alders along the northerly side of the old railroad right-of-way.

Introduced Vegetation. Introduced shrubs and herbs occur in several areas of the site. In the southeasterly area, near the lower, southerly edge of the eucalyptus stand, there are pure, dense stands of French broom. Along the less-shaded areas of the old railroad right-of-way, there are scattered, dense stands of anise and herbs such as hedge mustard, bull thistle, poison hemlock, periwinkle, and annual grasses.

Wildlife

The mixture of the project site's plant communities provides habitat for a variety of wildlife species. Depending on specific habitat requirements, species of animals may use several vegetation types or be restricted to one type. The mosaic of coniferous, hardwood, northern coastal scrub, and riparian communities provides a richer habitat for wildlife than the dense, monotypic eucalyptus thicket. The mixture of tree and shrub species of the former provides a variety of food, cover, and nesting and denning sites. The latter provides limited food, shelter, and nesting sites because of the high crowns and thin branches of the eucalyptus, and the few understory shrubs and herbs.

Mammals. Mammals expected on the project site include opossum, broad-footed mole, orante shrew, raccoon, striped skunk, grey fox, fox squirrel, deer mouse, brush rabbit, and black-tailed deer. Most of the mammals expected are wide-ranging and would include most of the site's habitats in their movements. The ornate shrew is the only expected mammal which is restricted to a single habitat type, the riparian. Away from the pure eucalyptus stand, the mixed woodland/scrub habitat provides a variety of food and shelter for the smaller mammals and shelter for the larger mammals, such as black-tailed deer.

Birds. A number of birds can be found on the site, depending on the season. Permanent or seasonal residents include sharp-shinned hawk, California quail, band-tailed pigeon, screech owl, Anna's hummingbird, downy woodpecker, Steller's jay, chestnut-backed chickadee, wrentit, purple finch, rufous-sided towhee, red-breasted nuthatch, brown towhee, and song sparrow. A number of spring or fall migrants may use the site as they pass through the area. Many of the expected birds will use the mixed woodland, coastal scrub, and riparian habitats for nesting sites, cover, and foraging. However, some species would be restricted to specific areas of the habitat mixture. For example, the wrentit and song sparrow will be found only in the northern coastal scrub, and the red-breasted nuthatch will be found only in the coniferous trees.

Reptiles. Reptiles expected on the site include California newt, California slender salamander, western toad, and Pacific tree frog. The riparian area and the more shaded areas of the mixed woodland/scrub habitat are the most suitable areas of the site for these species.

Species of Special Concern. According to the California Natural Diversity Data Base, the Alameda whipsnake (Alameda striped racer) is found in the general area of the project site. This snake, which is restricted to parts of Alameda and Contra Costa Counties, is listed as rare. Its optimal habitat consists of open, dry brushland with scattered grassy patches and rock outcrops. This snake has been recorded from Leona Heights Park, about three miles to the south, and from the head of Claremont Canyon in Oakland, about 2.5 miles to the north. However, because of the lack of preferred habitat on the site and the isolation of the site from existing preferred habitat, the probability of occurrence of this species on the project site is low.

Effects of Project Development on Vegetation and Wildlife

Development as proposed would not have significant impact on wildlife or wildlife habitat, although wildlife use of the site would be reduced and it could be expected that the project residents' household pets would cumulatively contribute to wildlife disruption. Major portions of the site, however, would remain in open space which would be accessible to the species which currently use these areas.

Vegetation clearance required for street construction, house construction, and installation of drainage facilities would involve removal of a number of alders and pines, and a relatively minor amount of the northern coastal scrub along the north side of the old railroad right-of-way. Many of the scattered pines along the mid- and lower-elevation areas of the site are beyond maturity and are declining in vigor, as evidenced by their large size, limited foliage, and broken branches; and by a number of fallen trees scattered over the site. It is anticipated that a number of these trees, outside of the immediate area of project construction, will have to be removed because they are hazards to the planned development. (The City's tree preservation ordinance prohibits the destruction, without a permit, of any coast live oak measuring four inches in diameter 4.5 feet above the ground, or any other tree, except a eucalyptus, measuring nine inches in diameter 4.5 feet above the ground.)

Although several of the site's oak trees are located in areas adjacent to proposed house sites or drainage improvements, where it is possible that they might be disturbed during construction, only two oaks, an 18-inch and a 20-inch located along the alignment of the project street, are proposed for removal. The reduction in the originally-proposed number of units, redesign and resiting of units, and relocation of the trail from the area above Shepherd Canyon Road to the project street, have substantially reduced potential impacts on the site's important vegetation. (Figure 21 shows the location of prominent trees associated with the area of proposed construction. Appendix D shows the relationship of prominent trees to the originally-proposed 19-unit plan.)

J. VISUAL CHARACTERISTICS

Architecture

Proposed house designs are shown on Figure 6, page 8, and on Figures 7, 8, and 9, beginning on page 10. A discussion of the architecture, prepared by the project architect, is contained in Appendix A.

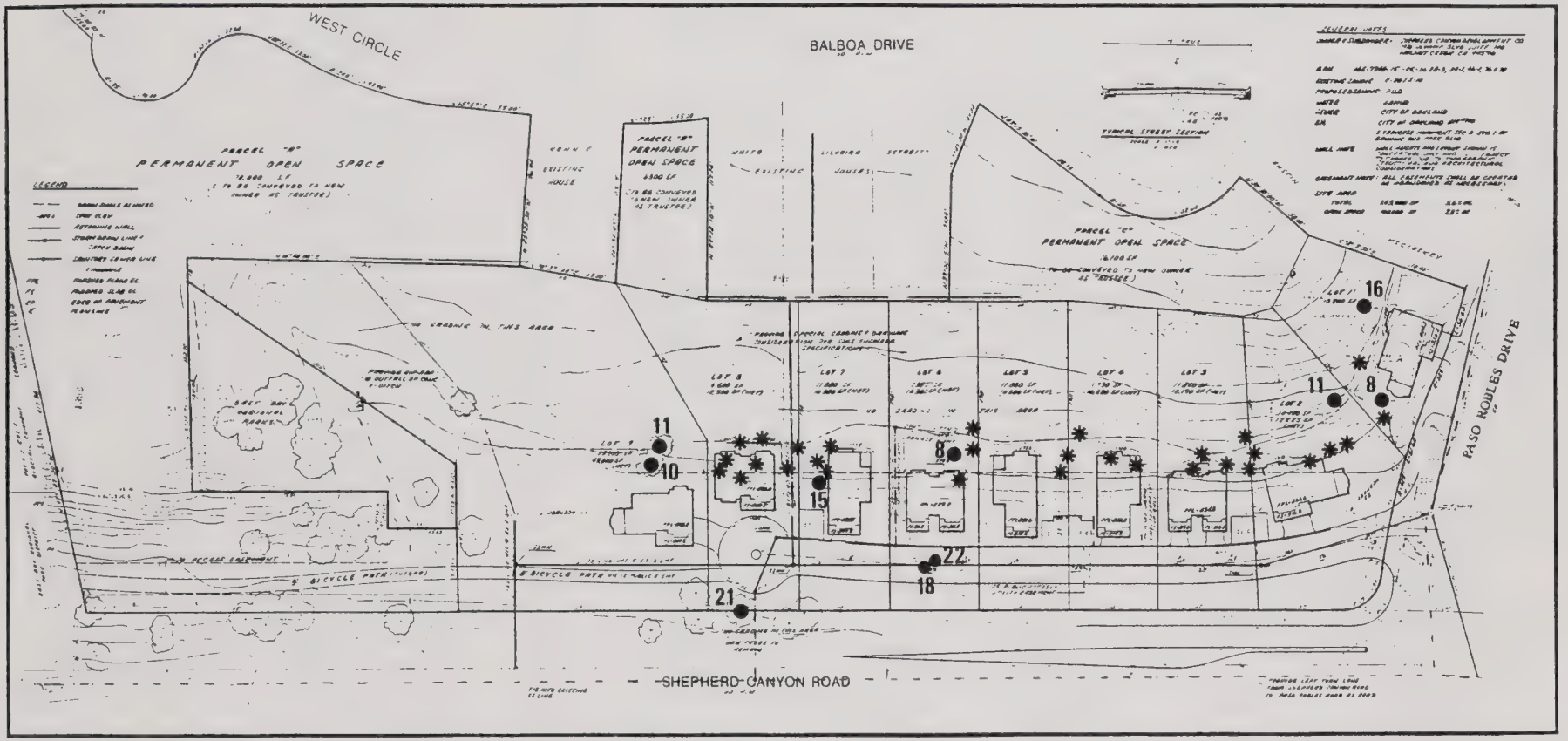


Figure 21. PROJECT SITE PLAN WITH LOCATIONS OF PROMINENT TREES IN AND ADJACENT TO AREAS OF PROPOSED CONSTRUCTION AND EARTHWORK Approx. scale: 1" = 100'
(Tree locations and types are from surveyed base map of site. Appendix D shows prominent tree locations relative to original 19-unit proposal.)

● = Oak Trees with trunk diameters shown in inches.

✱ = Pine Trees (mostly older trees beyond maturity).

Visibility of the Project Site

Roadway Views. The most open roadway view of the project site is from westbound Shepherd Canyon Road, approaching the site from the east. Along this route, up to a distance of about 1,000 feet east of Paso Robles Drive, westbound motorists have a clear view of the site, looking across Paso Robles Drive and almost directly down the on-site trail alignment. Because of dense vegetation around the area of the west site boundary, and trees and a high cut-slope embankment along the north side of Shepherd Canyon Road, along the west frontage of the site, eastbound motorists must be abreast of the site before they can see it, above the embankment, through several openings in the roadway-frontage tree screen. As motorists approach Paso Robles Drive from the west, the east end of the site becomes increasingly visible because of the low roadway embankment and lack of frontage vegetation along the east end of the property.

The site is visible, of course, from Paso Robles Drive, near Shepherd Canyon Road, and from a short stretch of Shelterwood Drive, across Shepherd Canyon Road and upslope to the southeast. The site is well screened by intervening vegetation from all other roadways in the area, including nearby West Circle, Balboa Drive, Woodrow Drive, and Paso Robles drive above the northeast site boundary.

Views from Surrounding Residential Areas. Because of the dense stands of trees on and surrounding the project site, the site is not visible from most nearby residential properties. The most unobstructed residential views of the site are from the area across Shepherd Canyon Road to the southeast, from two houses on Shelterwood Drive, several on Westover Drive, and one at the top of the ridge. Dense on-site vegetation provides good screening of views from existing units at the north site boundary, along West Circle and Balboa Drive. The house on Paso Robles Drive just north of the site has a partially-screened view of a portion of the east end of the site, the area where the unit on proposed Lot 1 would be located. Another nearby house, on Woodrow Drive, just above the northeast corner of Paso Robles Drive and Shepherd Canyon Road, has a partially-screened view of the site looking westward along the area of the on-site trail.

Visibility Photo-Study

On the following pages, Figures 22 through 30 provide a photographic study and discussion of project-site visibility.

Figures 31 A and B, and 32 A and B provide before- and after-development sample views of the site from two off-site vantage points. The after-development views, produced with Computer Assisted Design techniques, are accurate with regard to building mass, building locations, and photograph perspective, but are not intended to precisely reflect proposed architecture. (The method used to produce these "perspective photo montages" is briefly described in Appendix F.)

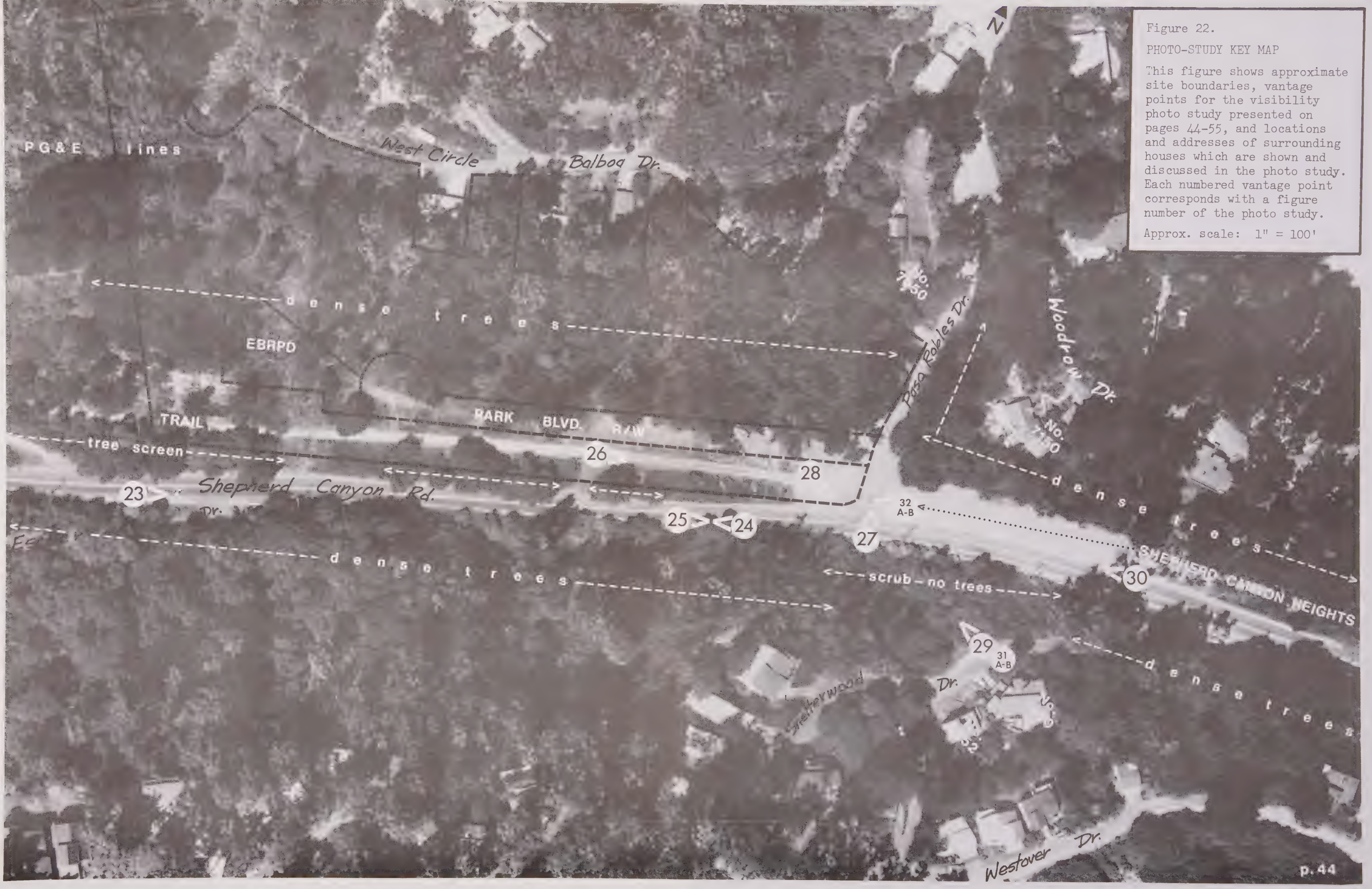


Figure 22.

PHOTO-STUDY KEY MAP

This figure shows approximate site boundaries, vantage points for the visibility photo study presented on pages 44-55, and locations and addresses of surrounding houses which are shown and discussed in the photo study. Each numbered vantage point corresponds with a figure number of the photo study.

Approx. scale: 1" = 100'

Figure 23.

View looking eastward along Shepherd Canyon Road from a vantage point approximately abreast of the project site's west boundary. The side street at the center of the photograph is Escher Drive. This stretch of Shepherd Canyon Road is enclosed by dense vegetation above steep slopes along both sides of the roadway. At this point, the cut-slope embankment in front of the project site (left) is about 17-18 feet above the roadway pavement. This difference in elevation, combined with a dense stand of oaks and other trees, would preclude views of the developed project from this vantage point. Between this point and Paso Robles Drive, the height of the embankment in front of the site decreases as the elevation of the roadway increases, and the embankment disappears at the east site boundary. This change in relative elevations between the lower part of the site and Shepherd Canyon Road, and several openings in the dense vegetation at the top of the embankment (Fig. 22), allow the project site to become increasingly visible to eastbound motorists. However, until the motorist reaches the open area approaching Paso Robles Drive, the site is visible only in brief glimpses.

None of the vegetation shown in this view, along the site frontage, would be removed as a result of project development; and the applicant proposes that all open areas along the site frontage be planted with landscape screening.

Figure 24. View looking westward along Shephard Canyon Road from a vantage point approximately 150 feet west of Paso Robles Drive. At this point, the cut-slope embankment in front of the project site (right) has a height of about 4-5 feet. In this area, there is no vegetative screening between the site and the roadway (Fig. 22), so there are open views of the site for both eastbound and westbound motorists. The generally-dense vegetative screening along the top of the embankment (left side of Fig. 23) extends westward from the center of this photograph.

Figure 25. View looking eastward along Shepherd Canyon Road from a vantage point approximately 225 feet west of Paso Robles Drive (arrow). This is approximately the reverse view of the figure above. At this point, the embankment along the site frontage (left) is at its minimum height above the roadway, and lacks any vegetative screening. This is the area where the roadway would be widened to accommodate a left-turn lane onto Paso Robles Drive. Vegetation along the south side of the roadway, behind the 35 mph sign, should be removed, to increase eastward sight distance for left-turning motorists.

Figure 26. View looking eastward along the existing project-site trail from a vantage point approximately 350 feet west of Paso Robles Drive.

A: Typical young eucalyptus growth. The major tree-type on the site is eucalyptus. These are young trees which have sprouted from the trunks of trees which were felled in 1973, when major eucalyptus removal was undertaken as a fire-prevention measure.

B: Typical old Monterey pines. These are mature, very-tall trees which are part of a scattered stand which extends all along the lower- and mid-elevations of the site. In recent years, a number of these trees have fallen; others are in such poor condition that they are hazardous. As part of overall project landscape-development, all hazardous pines should be removed.

C: House at 7150 Woodrow Drive. This residence has a partially-screened view of the site; it is one of only two houses on the north side of Shepherd Canyon Road which have such views. (Houses on West Circle and Balboa Drive are well screened from the proposed area of site development.)

D: Distant houses east of the project site. Two or three houses on Gunn Drive, a little more than one-quarter mile from Paso Robles Drive, have partial, long-range views of the site. (These are the most distant residential views of the site which the consultant could locate.)

E: Trees 300 feet east of Paso Robles Drive, on the south side of the roadway (adjacent to the vantage point of Fig. 30).

F: Trees at easterly end of stretch of generally-dense vegetation between project site and Shepherd Canyon Road.

G: Paso Robles Drive.

Figure 27.

View looking north along Paso Robles Drive from Shepherd Canyon Road. The two cars at the left are parked approximately along the centerline of the proposed project street. (The vantage point for Fig. 28 is just in front of the white car.)

A: Mixed stand of young eucalyptus, pine, and other trees at east end of site. B: Existing house at 7050 Paso Robles Drive. This house currently has partially-screened views of the east end of the project site; the house on proposed Lot 1 will be the next-door-neighbor to this house. Vegetation removal required for the development of proposed Lot 1 will increase visual exposure of 7050 Paso Robles Drive to project-site development (landscape screening is proposed between the existing and proposed units). C: Dense oak growth just beyond the northeast corner of Paso Robles Drive and Shepherd Canyon Road (Fig. 30). This growth will screen views of the house on proposed Lot 1 from westbound motorists on Shepherd Canyon Road. The existing house at 7150 Woodrow Drive is just above and right of these trees (Fig. 26). D: Log barrier at northeast corner of intersection. This barrier was placed by the developers of the Shepherd Canyon Heights project; the area which can be seen in the photograph is the extreme west end of the Shepherd Canyon Heights site. Plans for this project call for construction of a trail and installation of landscaping in the area behind the log barrier. Landscaping of this area would provide long-term visual screening of the project site as viewed from vantage points along westbound Shepherd Canyon Road.

Figure 28. View looking east and southeast across the Paso Robles Drive/Shepherd Canyon Road intersection, from a vantage point at the east end of the project site, along the approximate alignment of proposed project street (Fig. 27).

A: Paso Robles Drive. B: Log barrier at west end of Shepherd Canyon Heights site. Shepherd Canyon Heights landscaping, behind the log barrier, and project landscaping at the southeast corner of the project site (the area in front of the street sign) could provide visual screening of project development for westbound motorists on Shepherd Canyon Road. C: Westbound vehicle on Shepherd Canyon Road, about 800 feet east of the site. D: Trees on ridges above Gunn Drive area east of site; houses on Gunn Drive are not visible from this vantage point (Fig. 26). E: Trees at southwest corner of Shepherd Canyon Road and Shelterwood Drive (item E, Fig. 26). F: Houses at 6460 and 6452 Shelterwood Drive. Because there are no trees in the area on the south side of Shepherd Canyon Road just east of Paso Robles Drive, these houses and four or five others above them (several on Westover Drive and one at the top of the ridge) have open or partially-screened views of the site. G: East end of dense tree stand which stretches all along the slope on the south side of Shepherd Canyon Road opposite the project site (Fig. 22). This stand of trees generally screens views of the site from houses on Westover Drive, west of Shelterwood Drive, although one or two houses in that area have some partially-screened views.

Figure 29. View looking west and northwest toward the east end of the project site from a vantage point in front of the house at 6460 Shelterwood Drive, showing site visibility from the houses which can be seen in Figure 28. The white car in the center of the photograph is located approximately along the alignment of the proposed project street. A: East end of dense tree grove which stretches along slope on south side of Shepherd Canyon Road, generally screening views of the site from houses along Westover Drive, west of Shelterwood Drive (Figs. 22 and 28). B: East end of stand of oaks and other trees along embankment between site and Shepherd Canyon Road. C: Scattered stand of old pines stretching along lower slope of project site, with dense stand of eucalyptus and other trees behind. These trees (other than the tall pines, which lack lower-elevation foliage) screen views of the site from existing units on West Circle and Balboa Drive. D: On-site trail. E: Paso Robles Drive.

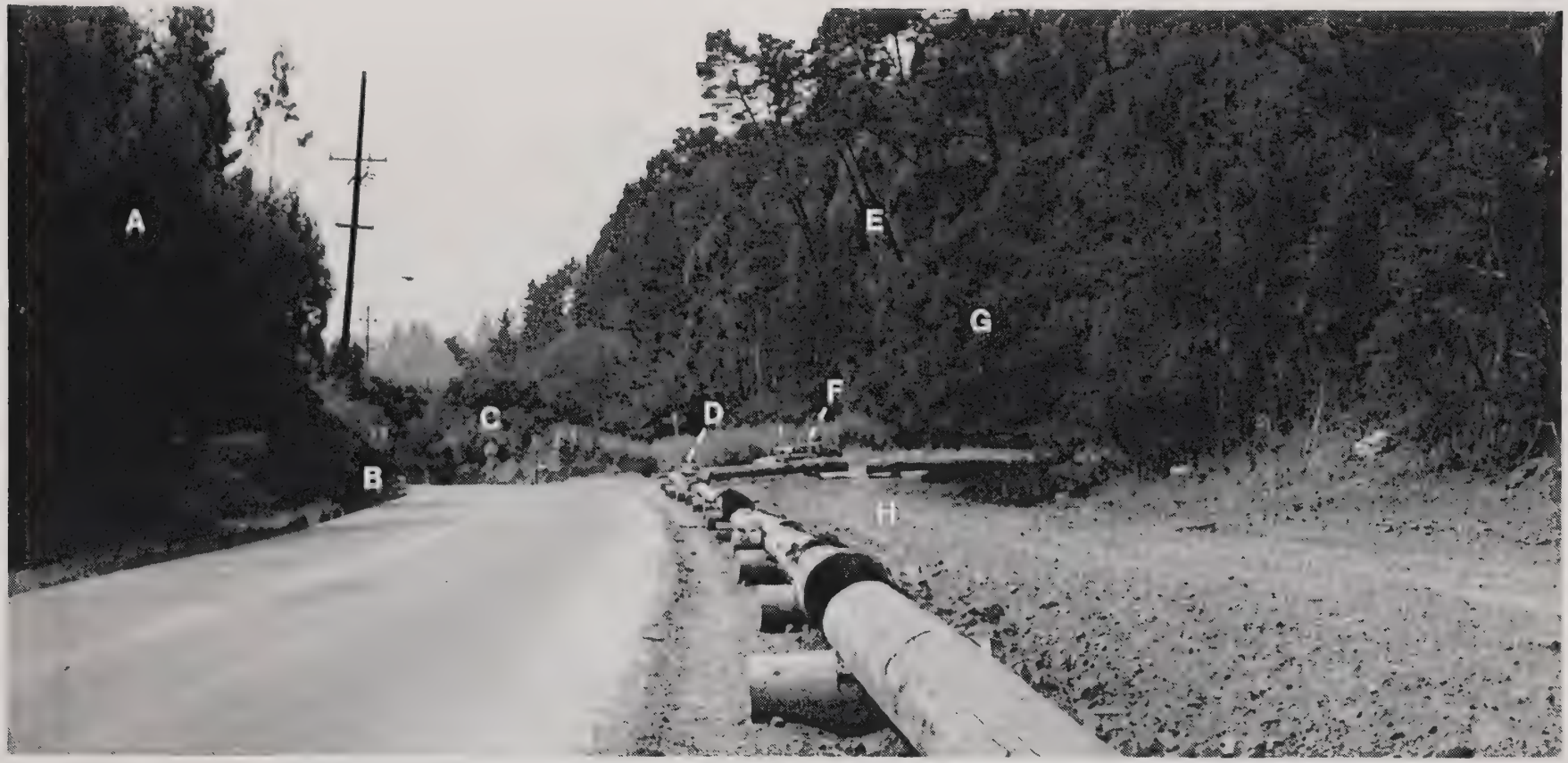


Figure 30. View looking west and southwest along Shepherd Canyon Road toward the project site (see opposite view on left side of Fig. 28). A: Trees at southwest corner of Shepherd Canyon Road and Shelterwood Drive (Figs. 22 and 28). B: Lower-elevation vegetation on south side of Shepherd Canyon Road, which should be selectively cleared to increase sight-distance for eastbound motorists turning left onto Paso Robles Drive. C: East end of screening vegetation along embankment between site and Shepherd Canyon Road (Fig. 24). D: Gate at on-site trail entrance. E: Large pines on lower and intermediate slopes of site, with other trees behind. F: Vehicles parked on approximate alignment of proposed project street, at southeast corner of site, adjacent to Paso Robles Drive. G: Oak trees just beyond northeast corner of Shepherd Canyon Road/Paso Robles Drive intersection. The house at 7150 Woodrow Drive is above these trees to the right (Figs. 22, 24, and 27). H: West end of old railroad right-of-way, which is part of the Shepherd Canyon Heights site. According to plans for that project, this area will have landscaping and an extension of the Shepherd Canyon Trail. Landscaping along this strip, and around the southeast corner of the project site, would provide important screening of views of the developed project for westbound motorists on Shepherd Canyon Road. (Landscaping around the Paso Robles Drive intersection should be carefully designed to have good screening quality while allowing adequate sight distance for outbound turning movements.)

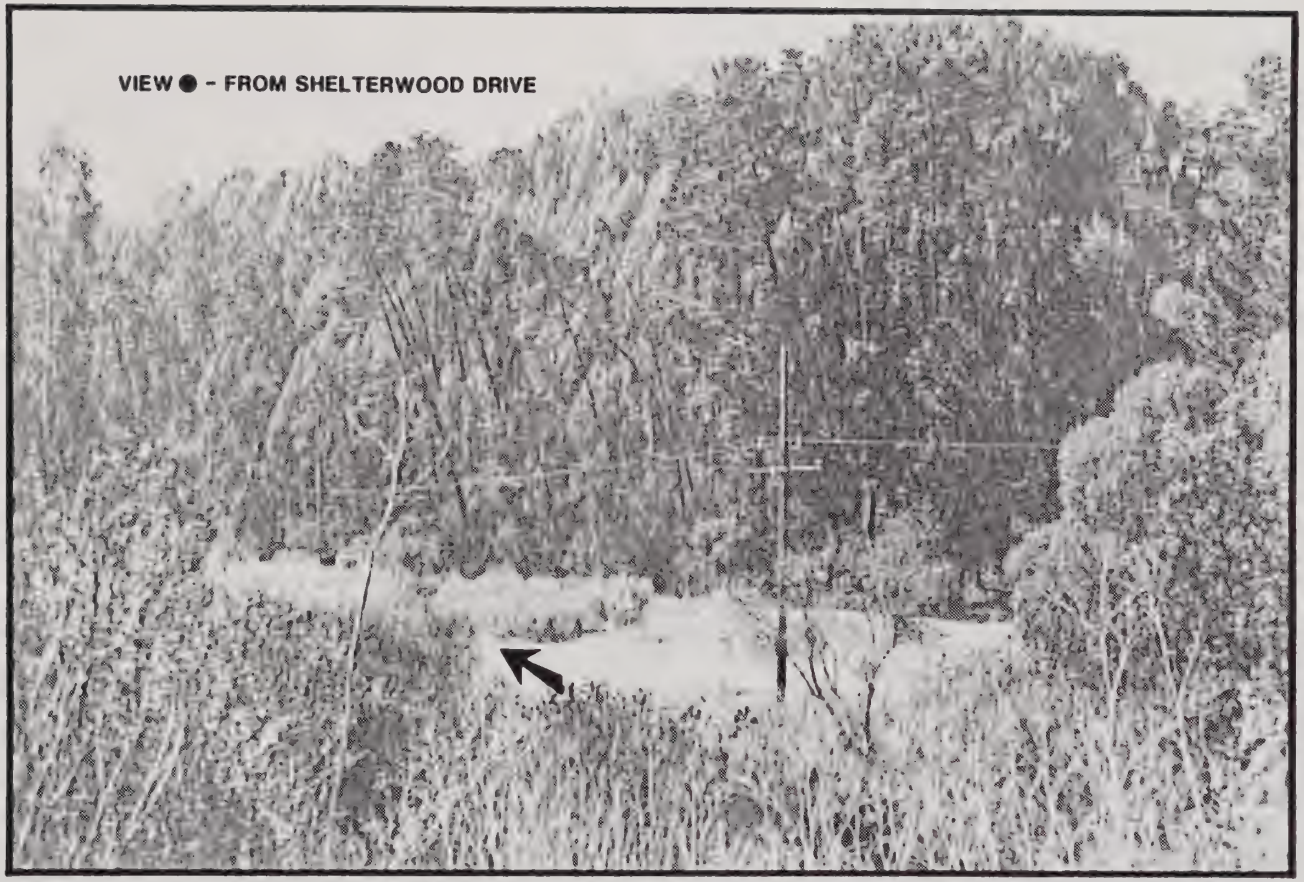


Figure 31-A. Before-development view of project site, looking northwest toward the east end of the project site from a vantage point in front of the house at 6460 Shelterwood Drive. (Same view as in Fig. 29, p. 50.) Arrow points to existing gate on on-site Shepherd Canyon Trail.

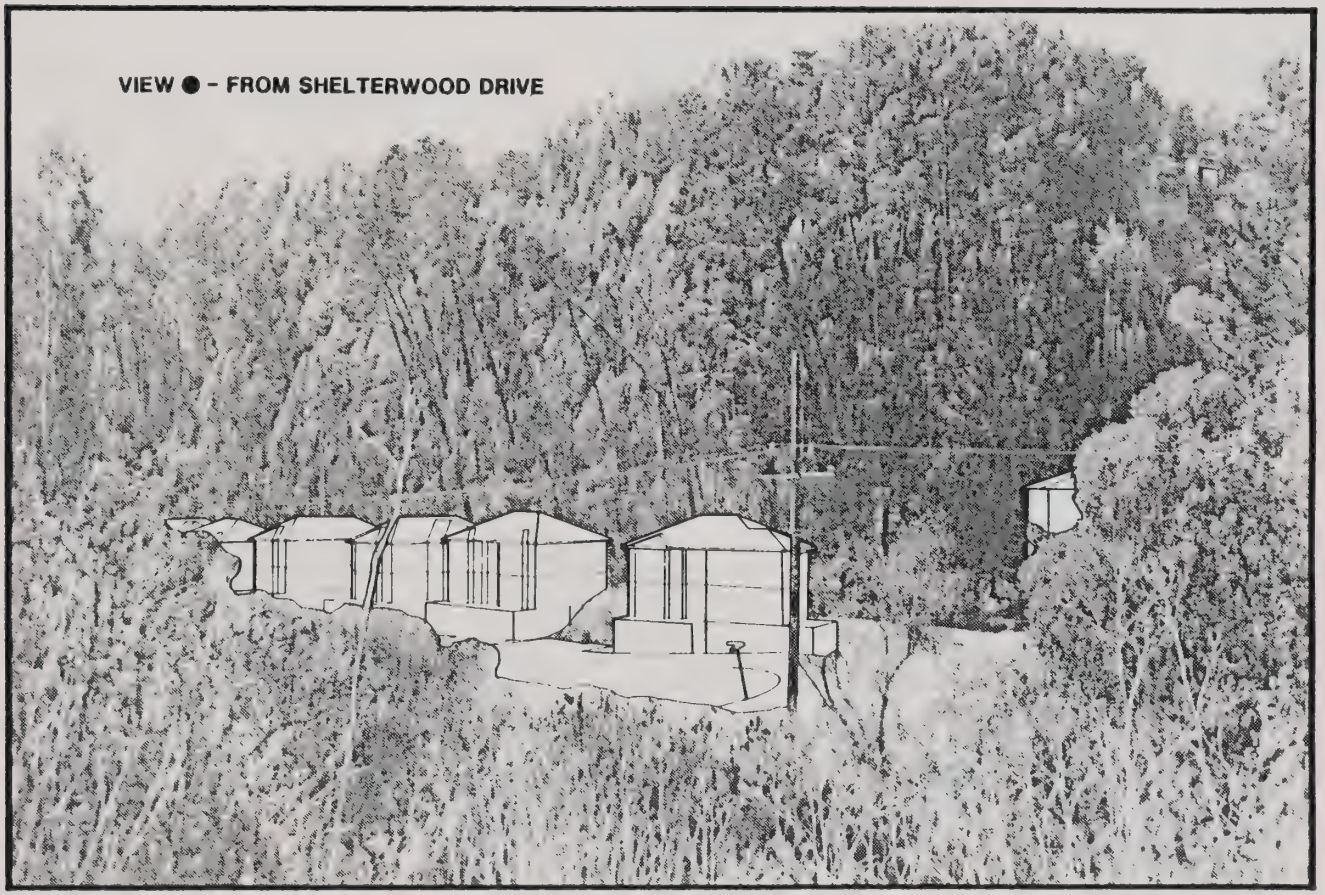


Figure 31-B. After-development view of project site with same vantage point as Figure 31-A, above (see vantage-point location on Fig. 22, p. 44). Portion of proposed unit on Lot 1 is at far right. Beginning at the utility pole and extending to the left edge of the photograph are units on Lots 2, 3, 4, and 5, and portions of units on Lots 6 and 7 (see Fig. 5, p. 7 for lot and unit locations).

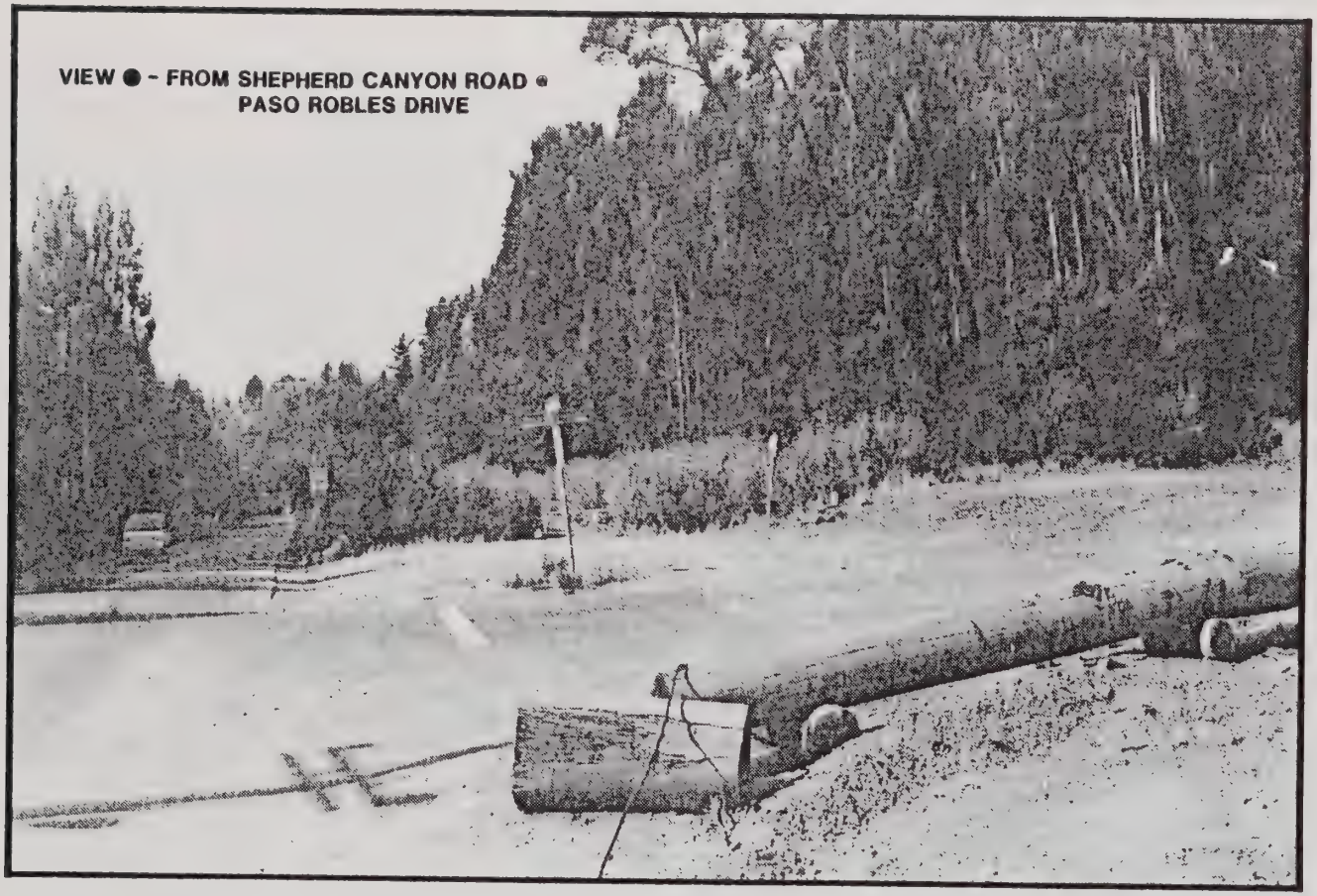


Figure 32-A. Before-development view of project site, looking to the west across Paso Robles Drive and the west end of the Shepherd Canyon Heights site, with Shepherd Canyon Road to the left (see vantage-point location on Fig. 22, p. 44; also, see similar, more distant view in Fig. 30, p. 51). Entrance gate to Shepherd Canyon Trail is directly behind street sign in center of photograph.

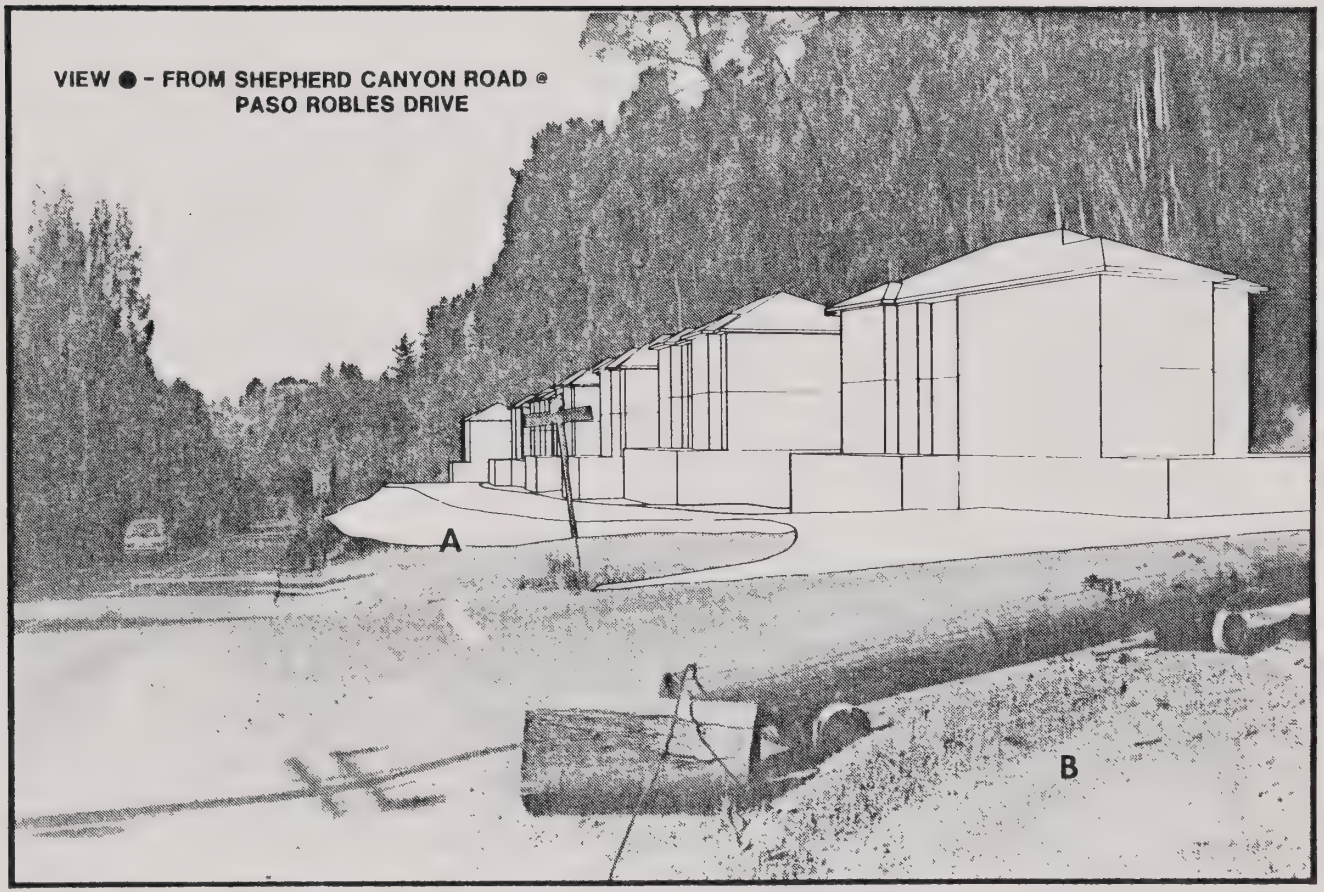


Figure 32-B. After-development view of project site with same vantage point as Figure 31-A, above. A: Area along Shepherd Canyon Road frontage and at southeast corner of site, where applicant proposes landscape screening. B: Landscaping along the west end of the Shepherd Canyon Heights site will also be important, to provide screening from westbound Shepherd Canyon Road east of the project site. (Figures in the Environmental Impact Analysis section of the EIR show potential of such landscape screening.)

IV.
ENVIRONMENTAL IMPACT ANALYSIS

A. OPEN SPACE AREAS

Impact. Project plans show three "permanent open space" parcels, but the matter of ownership and long-term maintenance responsibility for these parcels has yet to be resolved. The applicant has indicated that he wishes to dedicate these parcels to either the City or the East Bay Regional Park District, and it is understood that this is also the desire of the Shepherd Canyon Homeowners Association. However, no information has been presented indicating whether the City or the Park District would be willing to accept such dedications.

Mitigation. Before the Planning Commission takes action on the project application, the applicant should present a proposal for resolving the issue of ownership and long-term maintenance of the open space parcels. Any of the open space parcels not dedicated should be retained as commonly-owned project open space, with development rights granted to the City, to preclude future residential development, and with adequate provision for long-term maintenance responsibility by the nine project owners. For open space Parcel B (Fig. 5), the 6,300 square-foot lot of record fronting the north site boundary at the intersection of West Circle and Balboa Drive, an alternative would be to sell or grant the parcel to one or both of the next-door owners, with deed restrictions precluding future residential development. For open space Parcel C (Fig. 5), the 16,100 square-foot parcel in the northeast area of the site, fronting Balboa Drive, an alternative would be to extend the interior property lines of residential Lots 1-5 into the open space, thereby eliminating the open space parcel by adding portions of it to each of the five residential lots. This alternative could include a scenic easement, or similar restriction, over the area of the currently-proposed open space, to preclude future construction.

B. PROJECT FIRE HAZARD

Impact. The project site is in a critical fire-hazard area, and the Fire Prevention Bureau has indicated that firefighting access to the rear yards of the houses could be difficult due to the terrain of the upslope lots. Thus, even with good Fire Department response time and adequate firefighting water supply, a structural fire could go out of control and spread along the back sides of adjacent project units or could spread upslope and involve off-site property and structures.

Mitigation. Project units should be equipped with residential fire-sprinkler systems. (Such systems provide the most effective firefighting method for structural fires, and can be expected to extinguish fires prior to arrival of firefighters.)

C. ACCESS TO THE ON-SITE PORTION OF THE SHEPHERD CANYON TRAIL

Impact. For heavy maintenance-vehicles, the project-site Park Boulevard public right-of-way provides the only access to the Shepherd Canyon Trail between Paso Robles Drive and Snake Road. Because this public right-of-way would be replaced by a private street, the City must have assurance that project development as proposed would allow the continuation of necessary maintenance access without subjecting the City to unwarrented access problems or property-damage-liability problems.

Mitigation. The roadway section of the proposed private street should be built to a standard which will accommodate long-term public- and utility-vehicle access, and the applicant's final improvement plans should include provisions, acceptable to the City, for controlling general access to the trail, at the west end of the private street, while accommodating maintenance and emergency access. (Such provisions are discussed in Appendix G, in the Office of Parks and Recreation memorandum which was a response to the Administrative Draft EIR.)

D. PROJECT PARKING

Impact. Because most of the units proposed along the private project street will not have driveways long enough to accommodate parked vehicles, and because it can be expected that some residents will use one or both of their garage spaces for non-vehicle storage, it can be anticipated that there will be substantial competition for proposed perpendicular parking-bay spaces, and that resident and guest parking will periodically--or regularly--occur along the south side of the street, thereby resulting in congestion and a reduction in travelway width to less than the 20 feet needed to provide adequate emergency-vehicle access.

Mitigation. The project plan should be revised to include parallel parking bays along the south side of the proposed private street. (Because the project-site trail, along the east end of the site, would be on the private street, the undeveloped strip of land along the site frontage would have a minimum depth of about 24 feet between Shepherd Canyon Road and the project street. This depth would be sufficient to accommodate eight-foot-wide parking bays and still leave 16 feet of depth for landscaping. It appears that the street length is sufficient to accommodate at least four two-car bays, which would provide a total of eight spaces, one for each of the units which would have no driveway parking.)

E. NOISE

Impact. For the proposed units along the private street parallel to Shepherd Canyon Road, the living spaces with greatest exposure to traffic noise will have interior levels 1 to 2 dB in excess of the 45 dB interior-noise standard, under current traffic conditions, and levels 2 to 3 dB in excess of standard under future traffic conditions (based on dwelling-unit locations similar to those studied for the 1984 project EIR).

Mitigation. For operable windows facing Shepherd Canyon Road (units on Lots 2-9), install 3/16" glass (rated STC 25 or higher) or any type of double-pane thermal insulating glass. (See "Environmental Noise Assessment Study," May 4, 1984, by Edward L. Pack Associates, Inc., contained in Appendix F of the 1984 project EIR.)

F. GEOLOGY AND GRADING

1. Quaternary Slopewash

Impact. Potentially unstable colluvial deposits occur on the slope above six of the proposed units along the proposed project street.

Mitigation. In accordance with the recommendations of the applicant's geotechnical consultant, Geo/Resource Consultants, Inc. (GRC), foundation walls or separate retaining walls at the backs of units should be designed to resist

active creep forces. Drainage facilities behind each wall should include concrete-lined interceptor ditches to intercept overland flow, and subdrains to intercept subsurface water.

2. Seismically-Induced Groundshaking

Impact. The potential for damage caused by groundshaking accompanying a major earthquake in the San Francisco Bay Region should be regarded as an unavoidable risk.

Mitigation. Although the potential for earthquake damage can not be completely eliminated, the most effective methods of controlling damage are adherence to good construction practices involving grading, drainage, and foundation design-standards which are conservative with regard to earthquake safety. Although the applicant's geotechnical report (GRC) provides prudent recommendations for site development, the following additional precautions are recommended:

a. No cut slopes should be permitted in colluvial areas without the specific approval of the project's geotechnical engineer.

b. Cut-slope gradients in bedrock areas should not exceed 2:1 (50%) without specific approval of the project's geotechnical engineer.

c. A Grading Completion Report for the project should include a detailed as-built geologic map, prepared by a registered geologist. The purpose of such a map would be to ensure that anticipated conditions were actually encountered during grading, and/or that unexpected conditions were recognized, and their significance called to the attention of the engineer, so that design could be adjusted in the field.

d. GRC has not provided recommendations for fill slopes. If fill slopes are planned, specific recommendations should be provided by the project's geotechnical engineer.

3. Test Pits

Impact. The test pits for the 1984 EIR's geology investigation were loosely backfilled, and the backfill material would not be suitable for support of planned structures.

Mitigation. If improvements are planned in the areas of the test pits, the backfill should be properly compacted during site grading.

G. DRAINAGE

1. Drainage Plans

Impact. The submitted drainage plan does not include details regarding pipe sizes or drainage systems for individual residential lots.

Mitigation. Final improvement plans should include pipe sizes, with appropriate runoff calculations, and drainage details for individual lots, including foundation-wall and retaining-wall subsurface drainage and methods for collecting and conveying roof runoff.

2. Drainage Maintenance

Impact. Because of the combination of steep project-site slope, the location of improvements at the base of the slope, and the proposed provision of common, privately-owned drainage facilities, the City must be assured that project residents will act collectively to provide long-term drainage-system maintenance and repairs in order to preclude runoff-related geologic and property-damage problems.

Mitigation. In conjunction with submittal of final project plans, the applicant should propose a system for assuring long-term drainage-system maintenance and repairs, permanently binding on project property owners, to be included in the project's conditions of approval.

3. Proposed Interceptor Ditch (Fig. 5)

Impact. The proposed concrete interceptor ditch above and behind the project units, which would extend from proposed Lot 1 to the existing headwall and pipe on the East Bay Park property at the west end of the site, would collect runoff from individual lots and divert it to other lots and to the East Bay Park property.

Mitigation. In conjunction with review of project drainage plans, the City should consider whether runoff from individual subdivision lots should be conveyed onto or across other lots. Ideally, each of the proposed lots would have its own system for collecting upslope, overland flow and conveying it to the nearest adequate storm drain. This is both a technical issue (with regard to the design and maintenance requirements of project drainage facilities) and a legal/policy issue (with regard to the diversion of subdivision runoff and potential liability problems for the City). In any case, the proposal for diverting project-site runoff to the East Bay Park property, located within the west end of the project site, should be carefully considered.

4. Runoff from Existing Houses on West Circle and Balboa Drive

Impact. Although revised project plans no longer require consideration of drainage facilities to accommodate runoff from previously-proposed units along the north boundary of the site, the extent to which runoff from existing units on West Circle and Balboa Drive would effect potentially-sensitive colluvial areas above houses on proposed Lots 6-9 (Figs. 5 and 19) is not known.

Mitigation. The final project improvement plans should be accompanied by a report from the applicant's geotechnical consultant, specifically addressed to the effects of runoff from upslope units onto the colluvial areas above proposed Lots 6-9. This report should provide substantive information

indicating whether the proposed drainage facilities will be adequate to protect the colluvial areas and associated units or whether an additional, mid-slope drainage ditch will be needed above the colluvial area.

(Note. Appendix F contains memoranda prepared by the City's Public Works Department, as responses to review of the Administrative Draft EIR, which address issues of drainage maintenance and the design of the proposed interceptor ditch and associated facilities.)

H. VISUAL CHARACTERISTICS AND VEGETATION

Impact. Development as proposed would require the removal of trees and other vegetation along the lower slope of the project site, and could endanger a number of important trees which are located adjacent to proposed areas of foundation, street, and drainage-system earthwork. Due to lack of screening vegetation in the area of the Shepherd Canyon Road/Paso Robles Drive intersection and along portions of the project-site frontage, units along the proposed private street will be highly visible from westbound Shepherd Canyon Road, from Paso Robles Drive near Shepherd Canyon Road, from some vantage points along eastbound Shepherd Canyon Road, and from a portion of the residential area across Shepherd Canyon Road, southeast of the site. Several nearby houses, including one on Paso Robles Drive just north of the site and one on Woodrow Drive just east of the site, will have partially-screened views of portions of the project. The level of visibility of the concentrated mass of project units will be inconsistent with the generally-undeveloped, heavily-wooded visual character of the Shepherd Canyon corridor in the vicinity of the site.

Mitigation.

1. Provide natural-appearing finish materials and neutral colors, to limit strong visual contrasts.

2. Provide a detailed vegetation and landscaping plan addressed to methods of minimizing project-site vegetation removal and providing landscaping to optimize long- and short-term vegetative screening. This plan should be coordinated by a landscape architect but should include recommendations from a qualified vegetation specialist with knowledge of characteristic species of the Oakland Hills biological setting. The plan should include, but not necessarily be limited to, the following:

   a. Detailed locations and types of prominent trees and other vegetation which would be removed by development or which could otherwise be adversely affected by development.

   b. Construction methods which would assure the protection and preservation of important trees in areas adjacent to proposed street, house, and drainage-facilities construction.

   c. An overall landscaping plan designed to ultimately achieve a high level of visual screening of project development from important vantage points. This should include screening trees and shrubs in all open areas along the site's Shepherd Canyon Road frontage, along the Paso Robles Drive frontage, and at the northeast corner of Shepherd Canyon Road and Paso Robles Drive. To the extent practical, trees and other vegetation should be provided

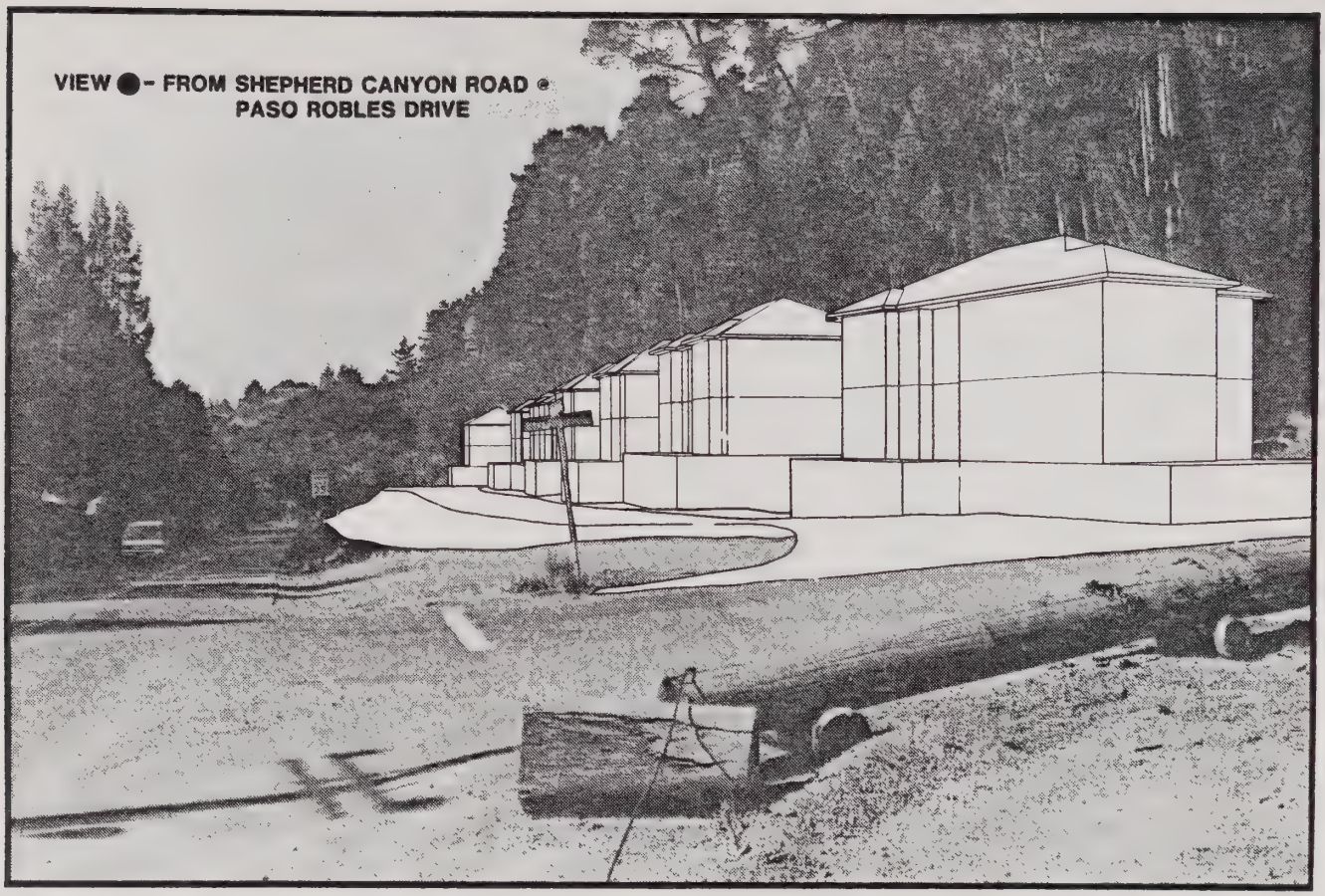
in front of and between project units, to visually "soften" structural forms and reduce the effects of development mass. Species should be selected to balance the need for draught tolerance, desire for rapid growth, compatibility with existing vegetation in the Shepherd Canyon corridor, and requirements for firefighting access and prevention of the spread of wildfire.

The extent to which the developer of the Shepherd Canyon Heights project will be required to landscape the area at the northeast corner of Paso Robles Drive and Shepherd Canyon Road is not known. This area should be heavily landscaped in order to provide dense, ultimate screening of project development from vantage points along westbound Shepherd Canyon Road (within the limits of the need to allow adequate sight distance for outbound turning movements from Paso Robles Drive). In order to achieve the appropriate level of landscaping for this area, it will probably be necessary for the project's landscape architect to coordinate his planning with that of the Shepherd Canyon Heights landscape architect.

Careful attention should also be paid to the need for landscape screening along the Shepherd Canyon Road frontage at the east end of the site. In this area, dense screening will be important to limit views of the site from both eastbound and westbound Shepherd Canyon Road. This area will also require special attention with regard to views of the site from the residential area to the southeast (see Fig. 29, p. 49; and Figs. 31-A and 31-B, pp. 52 and 53). For screening of these views, it will be important to consider trees which will ultimately achieve substantial height, spread, and density of foliage. (Figures 33 A, B, and C, on the following pages, show the potential effectiveness of landscaping to screen views of the developed site from westbound Shepherd Canyon Road.)

Overall, project landscaping should be oriented to maintaining and enhancing the vegetative character of the Shepherd Canyon corridor, as well as providing project-site screening. Preparation of the landscaping plan should not be an exercise in designing typical, suburban-residential patterns of colorful deciduous street trees and flowering shrubs, lined-up in predictable, symmetrical patterns.

d. In conjunction with approval of the project landscaping plan, the City should require bonding or other assurance that the approved landscape plan will be implemented. For this project, in conformance with the goals of the Shepherd Canyon Corridor Plan, landscaping should be considered no less important than other project improvements. (Assurance of landscape installation should be accompanied by assurance of landscape maintenance, including an adequate irrigation plan and possibly including a landscape maintenance agreement binding on the project homeowners.)



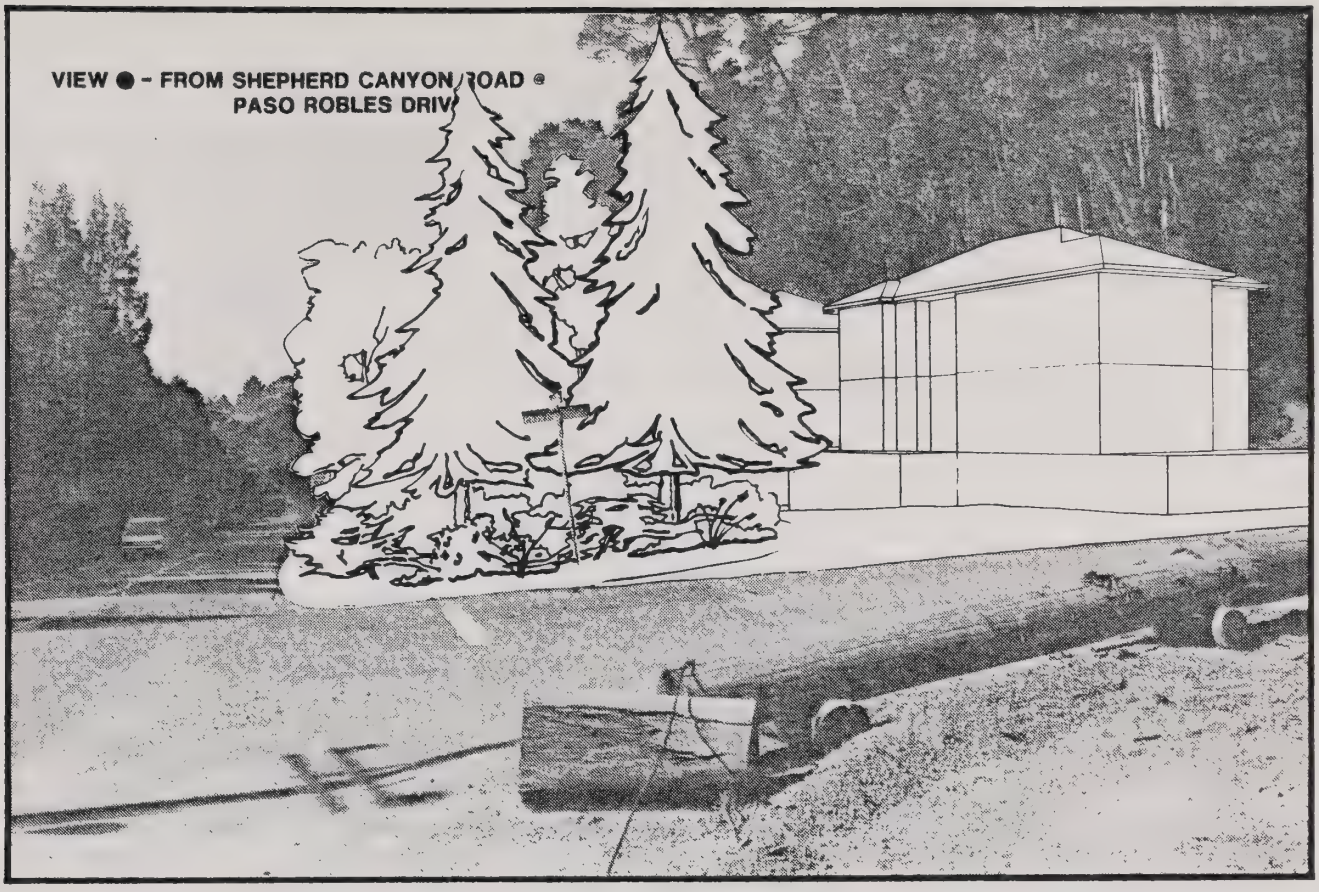
POTENTIAL FOR LONG-TERM LANDSCAPE SCREENING OF VIEWS OF PROJECT SITE FROM SHEPHERD CANYON ROAD

The three figures on these two pages show the potential for landscaping to provide long-term screening of views of the project as seen from vantage points along westbound Shepherd Canyon Road. The landscaping shown is not intended to be specific with regard to species or plant locations. That is, it is not a landscaping recommendation (except with regard to landscaping areas) nor does it represent the landscaping plan which will be submitted by the applicant. Rather, it is intended to show the possibility, with dense planting, of providing substantial landscape screening. (The scale and density of landscaping which is shown would require years of growth, possibly 10-20 years, depending on species, number and locations of plants, and quality of long-term maintenance.)

Figure 33-A (above). After-development view of site, looking westward across Paso Robles Drive. (Same view as Fig. 32-B, p. 55.)

Figure 33-B (above, right). Same view, with dense, mature landscaping around southeast corner of site. Unit at right is on Lot 2 (Fig. 5, p. 7), which should have its own screening landscaping.

Figure 33-C (right). Same view as Figure 33-B, but with an additional screening layer of dense, mature vegetation at the northeast corner of Shepherd Canyon Road and Paso Robles Drive, at the west end of the Shepherd Canyon Heights site.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V.
ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSAL IS IMPLEMENTED

A. NON-SIGNIFICANT ADVERSE IMPACTS

1. Cumulative increase in peak runoff and cumulative decrease in downstream water quality.

2. Cumulative decrease in vegetation types and wildlife populations.

3. Cumulative increase in traffic volume.

4. Cumulative increase in air pollution.

5. Cumulative increase in demand for services and community facilities, and cumulative increase in energy consumption.

6. Cumulative increase in project-area ambient noise level; and short-term construction noise.

B. INTERMEDIATE-TERM SIGNIFICANT IMPACTS

Upon completion of construction, the row of eight project units along the new project street would have an appearance which is inconsistent with the varied character of residential development which is typical of the Shepherd Canyon area. Eventually, it could be expected, as is common with all new residential development, that the maturation of trees and shrubs--along Shepherd Canyon Road, around and between the project units, and at the northeast corner of Shepherd Canyon Road and Paso Robles Drive--would provide visual relief and screening which would hide or soften the development.

VI.
GROWTH-INDUCING IMPACTS

Development of the proposed project would constitute what is sometimes known as "infilling"--the development of an area which was bypassed in the course of development of the larger, surrounding area. Because of this, development of the project site would require no utility or roadway extensions which would open new areas to development. Therefore, the project would have no direct growth-inducing impact.

VII.
ALTERNATIVES TO THE PROPOSED PROJECT

A. NO PROJECT

The project site could be retained in its undeveloped state. Under this alternative, development impacts would be deferred for an undetermined period.

B. DEVELOPMENT ALTERNATIVES

The process of evolution of the plans for project-site development has already provided a broad range of development alternatives. Since 1984, these plans have presented three density alternatives, for 19, 17, and 9 units (as well as the intermediate 13-unit plan shown on Fig. 14, p. 17). Changes associated with these plans have involved incremental reductions in the length of the project street, various trail widths and alignments, modifications of the project boundaries, and modification of the architectural concept for the proposed units. Earlier plans called for units along West Circle and Balboa Drive; the current plan shows no units along the northerly site boundary, but has one unit located on Paso Robles Drive. The original development concept was for condominium ownership of units, with commonly-owned open space. The current proposal is for a PUD subdivision with individual lots and separate open-space parcels. All of the project-plan changes have been positive with regard to reduction of potential environmental impacts. Within this context, there appear to be few remaining development alternatives which would result in additional, major reductions in potential impacts; and some alternatives would reverse the process of impact-reduction which has already occurred as a result of plan changes to date.

1. Conventional Subdivision. The site could be developed as a conventional subdivision under the provisions of the R-20 zoning ordinance, rather than as a PUD. The required lot width in the R-20 district is an average minimum of 90 feet and a minimum of 75 feet. Because six of the eight lots currently proposed along the project street have widths of 60 feet, the required additional lot width would result in either fewer units in the area along Shepherd Canyon Road or a longer project street, or both. In terms of visual character, increasing the separation between units along the project street would have some positive impact. However, the advantages might be offset by the conventional-subdivision requirement for a minimum 30-foot wide public street, which itself would increase visual impact (along a greater street length), and which would require most of the project units to be moved farther upslope, generally increasing their visibility and requiring more earthwork and vegetation removal.

2. Location of Units Along the Northerly Site Boundary. Either as a PUD or a conventional subdivision, the site could be developed with the proposed density, but with some of the project units located along West Circle and Balboa Drive, as originally proposed. If two to four of the units along the project street were moved to the northerly site boundary, the resulting building separation along the project street would reduce the project's visual impacts in that area. However, overall project impacts would be spread over a larger area of the project site. Development along West Circle and Balboa Drive would require street widening, massive retaining structures, and substantial vegetation removal. The upslope construction would increase the potential for geologic problems, and additional hillside excavation and vegetation removal would be required to install a drainage system which would protect the lower-elevation units.

IIX.
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Previous Environmental Impact Reports

BILLINGTON, STEVEN D., June, 1984. "Draft Environmental Impact Report, ER 83-17, PUD 83-17B, 19-Unit Residential Development, Shepherd Canyon Road & Paso Robles Drive."

BILLINGTON, STEVEN D., Feb., 1986. "Final Environmental Impact Report (ER 83-17), An Addendum to the Draft Environmental Impact Report."

DINAR RUBIN & ASSOCIATES
architecture
planning
interior design

September 12, 1988

SHEPHERD CANYON RESIDENCES: ARCHITECTURAL DESCRIPTION

1. The proposed cluster is composed of nine residences, each containing three or four bedrooms; living room; dining room; family room; kitchen; 2½ bathrooms; two-car garage; front and rear terraces or decks. Unit sizes vary from 2,200 S.F. to 2,600 S.F.

2. Architecturally, the houses relate to the broad-eaved Bay Area Craftsman Style, a traditional building style common in Oakland and many East Bay communities.

3. All three plan types are architecturally coordinated in order to avoid the clutter of mismatched styles, colors , or finishes. However, each plan type is sufficiently different to avoid repetition or monotony.

4. The gently sloping hipped roofs provide sun protection, reduce apparent bulk, and do not compete with surrounding trees or vegetation.

5. The front elevations are characterized by projecting rectangular bays set back from the garages below. In fact, the garage roofs are used as front entry terraces, thereby reducing the scale and affording greater privacy for each house.

6. The design follows the City of Oakland Design Review Guidelines and meets all height restrictions. The design of the front terraces successfully resolves the common problem of exposed foundations and structure at the downslope side of the houses.

7. All three plan types are designed to have elevations which are composed of three recognizable parts; bottom, middle, and top. All entrances are carefully articulated with porches and entry steps.

8. Proposed Exterior Materials:

   a. Walls: Shingles finished with a clear or heavy-body stain in soft, neutral colors.
   b. Roofs: Fire-rated composition shingles in a dark tone.
   c. Windows: Factory-painted double-glazed aluminum windows, some with divided lights.
   d. Small pane wood french doors at entry and front terraces.
   e. Exterior fascias and trim: Painted wood, off-white or light tone.
   f. Exterior garage walls and building bases: Painted shiplap wood siding or stucco if budget permits.
   g. All houses are fully insulated to comply with Title 24.

9. All three plan types are stepped in section in order to minimize excavation and grading.

90 Gold Street
San Francisco, CA
9 4 1 3 3
415 • 956-1033

CALCULATIONS OF ESTIMATED ENERGY INPUTS - PUD 83-17B, SHEPHERD CANYON, OAKLAND

Because detailed, comprehensive data are not readily available for evaluating energy inputs for new developments in the City of Oakland, the evaluation guidelines of Contra Costa County* have been used for this analysis. This method involves the assumption that typical Contra Costa data are similar to actual required inputs in the City of Oakland for the same types of construction activities.

1. STREET AND UTILITY DEVELOPMENT. Site development inputs per linear foot of street length = 63 therms for "single-family conventional" construction (Contra Costa study, Table 1.5):

   440 lin. ft. x 63 therms/ft. = 27,720 therms

2. RESIDENTIAL CONSTRUCTION. At 14,511 therms/conventional unit (Table 1.5):

   14,511 therms/unit x 9 units = 130,599 therms

3. UPKEEP OF STREETS AND UTILITIES. For a 20-year period, at 1,331 therms/conventional unit (Table 1.5):

   1,331 therms/unit x 9 units = 11,979 therms

4. RESIDENTIAL OPERATION. Heating, cooling, lighting, and appliance operation over a 20-year period, including indirect energy required to produce and deliver household energy. (Contra Costa County energy-input factor is for El Cerrito area, which has heating/cooling energy use most similar to Oakland.)

   At 38,565 therms/unit/20 years (Table 1.6):

   38,565 therms/unit x 9 units = 347,085 therms

5. TRANSPORTATION (travel to and from the site). Based on previous studies of travel from Oakland/Berkeley Hills area, assume 65 VMT (Vehicle Miles Travelled)/day/unit.

   For fuel use, an average of 20 miles/gallon is assumed. The direct energy value of gasoline is about 1.25 therms/gallon, and indirect input for production of fuel is reflected by a factor of 1.21 (Contra Costa study, Table 1.2):

   Total estimated VMT for project = 65 VMT/day/unit x 9 units = 585 VMT/day

   585 VMT/day x 1 gal./20 mi. x 1.25 therms/gal. x 1.21 = 44.2 therms/day

   44.2 therms/day x 7,300 days/20 yrs. = 322,660 therms/20 yrs.

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* Interactive Resources, Inc.; May, 1976; Energy Conservation: Guidelines for Evaluating New Development in Contra Costa County, California (two volumes)

SUMMARY OF ESTIMATED ENERGY INPUTS FOR PUD 83-17B, SHEPHERD CANYON, CITY OF OAKLAND

	BTU x 100,000 (therms)*	% of Total	% With Transp. Input
INITIAL ENERGY INPUTS			
Street and Utility Development	27,720	5.4	3.3
Residential Construction	130,599	25.2	15.5
LONG-TERM NON-TRANSPORTATION INPUTS - 20-YEAR PERIOD			
Residential Operation	347,085	67.1	41.3
Upkeep of Streets and Utilities	11,979	2.3	1.4
TOTAL 20-YEAR NON-TRANSPORTATION ENERGY-INPUT ESTIMATE	517,383	100.0	
ESTIMATED 20-YEAR TRANSPORTATION ENERGY INPUT	322,660		38.4
TOTAL 20-YEAR INPUT	840,043		100.0

* One therm = 100,000 BTU. A BTU (British Thermal Unit) is the amount of heat required to raise the temperature of one pound of water by one degree F.

ALTERNATIVES FOR REDUCTION OF LONG-TERM PROJECT ENERGY CONSUMPTION

1. Provide solar systems for heating water.

2. Install energy-efficient appliances.

3. Insulate hot-water pipes and back-up water heaters.

4. Design units with passive solar systems:

   a. Limited window area on west and east building exposures.

   b. Larger glass areas on south exposures, to optimize solar-radiation warmth in the winter.

   c. Roof overhangs or wing-walls to shade windows and exterior walls in the summer and expose them to the sun in the winter.

   d. Interior heat-sinks (such as masonry or stone walls) which will absorb southern-exposure solar radiation during winter days and reradiate it during evenings.

   e. Other passive systems, as practical.

5. Locate windows to take advantage of natural circulation for summer cooling.

6. Install energy-efficient Heatilator-type fireplaces, with approved dampers, and provide for the drawing of fireplace combustion air from crawl spaces or other voids rather than from rooms.

7. Install flourescent lighting fixtures where possible rather than high-energy-use incandescent fixtures.

8. Where practical, install energy-efficient skylights to increase natural interior light and reduce dependence on artificial light.

9. Provide home insulation and weatherstripping in excess of current minimum standards.

10. Where possible, design landscaping to include deciduous trees at strategic locations where they will shade exterior walls and windows in the summer and expose them to solar radiation in the winter.

11. Install low-flow shower heads.

12. Design landscape materials and irrigation to minimize water consumption (production of potable water requires the consumption of energy).

13. Where practical, paint interior walls with light colors to provide optimum reflection of natural light and reduce dependence on artificial light.

RECOMMENDATIONS

SITE GRADING REQUIREMENT

Earthwork for the proposed construction will mainly consist of on-site cut and fill. At this time we assume that cut and fill will not be major. It is anticipated to be on the order of a few feet.

We recommend that any cut into the existing slope should not exceed 1.5 horizontal to 1 vertical. In some deeper cut areas, flatter slopes or temporary shoring will be required to avoid any raveling and slope instability during construction.

Prior to fill placement, the surface should be stripped of vegetation, scarified, moisture conditioned, and compacted to 90% of maximum dry density, in accordance with ASTM D1557-78 method. All fill should be placed in lifts of not more than 8 inches in loose thickness and should be compacted to 90% of maximum dry density.

Following the excavation, the exposed surface should be approved by our geotechnical engineer. If any soft spot is detected after the excavation, the soft material should be overexcavated and the bottom be proof-rolled by a compactor.

On site soils at suitable moisture content and free from deleterious and/or organic material can be used as engineered fill. If import soils are used, they should be inorganic and non-expansive in nature (Liquid Limit less than 30 and Plasticity Index less than 12) and they should not contain rocks or particles greater than 4 inches in greatest dimension. All fill soils should be approved by a qualified geotechnical engineer prior to their placement.

FOUNDATION DESIGN CRITERIA

We recommend that the drilled, cast-in-place concrete piers be used for all house foundations. The piers should have a minimum diameter of 12 inches and should penetrate at least 5 feet into either firm soil and/or bedrock. The piers should have a minimum penetration of 10 feet. We recommend that an average allowable skin friction of 1200 pounds per square foot (psf) in the firm soil or decomposed siltstone be used to determine the length of the pier required for dead plus live load condition. A skin friction of 1600 psf can be used for total downward load including wind and seismic load. For temporary uplift load condition, we recommend that the skin friction for the pier

design be reduced to 2/3 of dead plus live load condition. Frictional support for piers in the upper 5 feet of fill should be neglected. Adjacent piers should be placed no closer than three times the diameter apart, center to center.

Lateral resistance can be obtained by passive pressure on the side of the pier cap or grade beam and frictional resistance between the bottom of the pier cap and the soil. We recommend that a net passive pressure of 800 pounds per square foot, uniform pressure distribution and a frictional coefficient of 0.35 times the vertical load be used for the lateral support. We recommend that the upper one foot of the soil, if disturbed, should be disregarded when considering passive pressure.

Additional lateral resistance can be obtained by considering passive pressure acting on an area two times the pier diameter in the upper 5 feet of each pier.

SLAB-ON-GRADE CONSTRUCTION

Slab-on-grade floor should be supported on firm subgrade consisting of a minimum one foot of recompacted engineered fill. Slabs should be underlain by at least six inches of clean, free draining gravel or crushed rock to provide a capillary moisture break. If intrusion of moisture through concrete slabs is undesirable, we recommend placement of an impermeable membrane above the drain rock and beneath the slab. The membrane should be covered with a 2-inch layer of sand as a protection against puncturing during the concrete pour.

PRELIMINARY FLEXIBLE PAVEMENT THICKNESS

Based on the soil classification and laboratory test results, we estimate that the R-value of the on-site soils to be generally on the order of 15 or more. Based on assumed traffic index for different traffic condition, our preliminary recommended pavement sections are presented in the table below:

RECOMMENDED MINIMUM A.C. PAVEMENT SECTION

Service Conditions	Assumed Traffic Index	Asphalt Concrete with Base Course: Asphalt Concrete Thickness (inches)	Asphalt Concrete with Base Course: Base Course Thickness (inches)
Light (Passenger Car Parking Areas)	4	2	6
Medium (Passenger Cars and Occasional Truck Traffic)	5	2.5	8
Moderately Heavy (Passenger Cars and Medium Truck Traffic)	6	3	10

C-12

The aggregate base should be conformed to Caltrans Standard Specification Section 26 and should be compacted to 95 percent relative compaction. Subgrade soils should be firm and non-yielding to provide support for pavement. We recommend that the upper 12 inches of the subgrade soil be moisture-conditioned and compacted to a minimum of 90% of maximum dry density.

RETAINING WALL DESIGN

We recommend that retaining walls should be supported by drilled, cast-in-place piers as recommended above. Retaining walls should be designed for an active equivalent fluid pressure of 50 pounds per cubic foot (pcf) for level backfill and 80 pcf based on 1.5 horizontal to 1 vertical slope backfill. If dynamic soil pressure increment is considered for the walls under earthquake condition, we recommend that an additional pressure of 10 x H pounds per square foot, uniform pressure distribution be considered, where H is the height of the buried wall. The above recommended pressures do not include the effects of surcharges, if any, behind the walls.

Additionally, it is recommended that drainage should be provided behind the walls to minimize development of hydrostatic pressures. Backdrain behind walls may consist of perforated pvc pipe surrounded by drain gravel or crushed rock (Caltrans Class

II Permeable Material). The pipe should be installed with holes down, and should be sloped to drain by gravity. The permeable material should be at least one foot thick and should extend to at least within one foot from the exposed surface. The drain material should be capped with a one foot layer of relatively impervious soils.

SLOPE PROTECTION AND DRAINAGE

We recommend that the bare slope after construction should be protected by vegetation to avoid erosion. Surface drainage should be properly directed to a convenient outlet. Wall backdrain and surface drainage should be collected to an enclosed pipe which will lead the water away from the existing slope and possibly to a flatter area away from the house area.

CONSTRUCTION CONSIDERATIONS

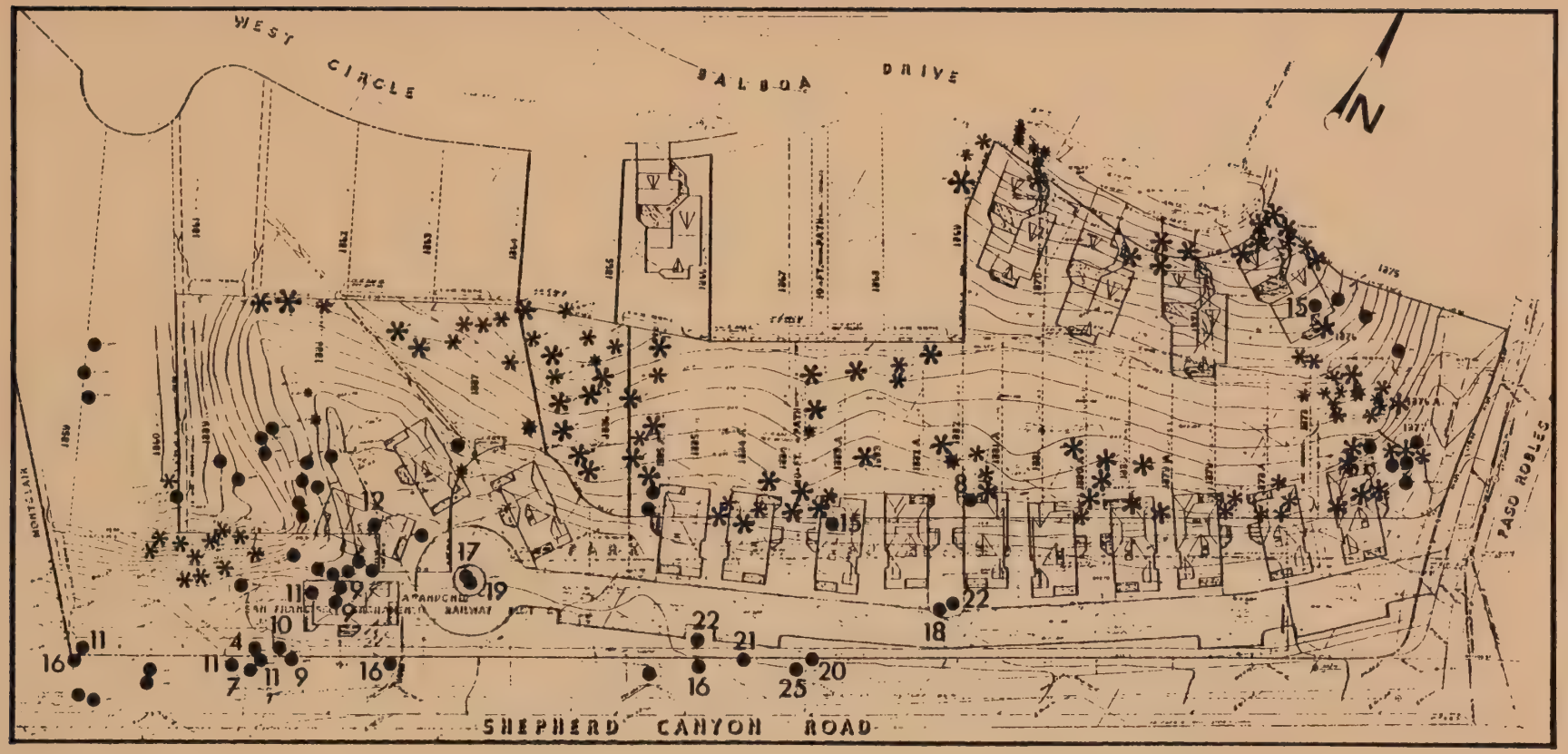
Based on subsurface information available to us, we anticipate that excavation over most of the site would be accomplished using conventional bulldozers and rippers. The rock outcrop found on lot 1877 to the east may require substantial work with jackhammers. It is also possible that there may be some zones within the outcrop that are more resistant and may require heavier equipment for excavation. We understand that the current plan is to build the house planned for that lot out from the outcrop to avoid excessive excavation.

Proper temporary slopes should be maintained from hillside excavation especially during the wet season. In areas where open excavations are deeper than 6 feet, with limited slope set back, temporary shoring may be required.

ADDITIONAL SOIL ENGINEERING SERVICES

We should review the final plans and specification when they have been developed to verify that the recommendations in our report have been properly implemented.

During construction, we should perform construction observation and testing during the excavation, foundation installation and fill placement. Since the details of the previous cut and fill construction at the site are not available for review, we recommend that we observe and correlate subsurface conditions exposed during excavation with data from our borings, and make any necessary changes in the excavated slopes, foundation support and other geotechnical design criteria, if necessary.



This is Figure 19 from the 1984 Draft EIR, showing the relationship between prominent project-site trees and the originally-proposed 19-unit development.

PROJECT DEVELOPMENT PLAN, WITH LOCATIONS OF MOST PROMINENT TREES Approx. Scale: 1" = 100'

Tree locations and types are from the surveyed base map prepared by Ivan Vegvary & Associates, Civil Engineers, as shown on the full-scale development plan (1" = 20').

● = Oak trees (with trunk sizes shown in inches for trees to be removed and for trees adjacent to proposed areas of development)

✱ = Pine trees (mostly older trees, beyond maturity, and possibly hazardous to development)

✸ = Other species (mostly cedars)

See Figure 9 for overall pattern of vegetation on and around the project site.

CITY OF OAKLAND
Interoffice Letter

To: Zoning Division Attention: Mr. Willie Yee Date: November 4, 1988

From: Police Department
Lieutenant F. Peoples - CSD

Subject: Shepherd Canyon Project

We have reviewed the Administrative Draft EIR for the Shepherd Canyon Project and residential development.

We recommend the following security features which could reduce the impact of this development on police services.

- All residences should display a clearly visible address, no less than 6" in height.
- All exterior doors, and doors leading to the interior from the garage should be 1-3/4" thick solid core in construction.
- All exterior doors should be equipped with the following:
  - 1" deadbolt locks, twin cylinder with key retaining feature.
  - 190° optical viewer, front door only.
  - Maximum security strike plates on all deadbolt locks.
  - Non-removable hinge pins on all exterior doors.

If you have any questions, please call Officer Curt Wengeler or me at extension 3066.

Freddie L. Peoples
Lieutenant of Police
Community Services Division

FLP:cww

600-10

PERSPECTIVE PHOTO MONTAGE

The method employed in plotting the photo montages is a computer generated direct arithmetic proportion perspective which is custom fit to the known field location of a camera vantage point. The perspectives are plotted from the building and grading plans submitted by the applicant. Buildings, roads and major grading features are entered into the computer as solid objects located in space by the x, y, and z coordinates taken directly from the applicants submittal.

The computer calculates the correct proportion for a perspective of the project that precisely matches the photograph. If the project is built to the scale and layout of the plans submitted the end result will agree visually with the photo montage composite.

The computer generated massing is drawn on an acetate overlay of the photographic blow-up. Existing portions of the photograph which will be hidden or changed are masked on the back of the acetate overlay. The end result shows how the altered scene will appear when the project is completed. The applicants may wish to submit their own rendered overlay showing proposed architectural and artistic detail, shades and shadows, and materials and textures to soften the computer massing version. The photo montages are intended to accurately portray the massing, proportion and location of proposed building projects to help visualize significant potential impacts before a project proceeds.

PARKER & ASSOCIATES ARCHITECTS & PLANNERS. 987 MORAGA ROAD SUITE C. LAFAYETTE. CALIFORNIA 94549

CITY OF OAKLAND
Interoffice Letter

To: City Planning Attention: Alvin James Date: December 21, 1988

From: Office of Parks and Recreation

Subject: ADMINISTRATIVE DRAFT EIR (ADEIR) DATED SEPTEMBER, 1988: SHEPHERD CANYON RESIDENCES

Thank you for the opportunity to comment on the proposed nine-unit residential development, subdivision 5915, ER 83-17. The Office of Parks and Recreation (OPR) appreciates the City Planning Department's recognition that the primary open space impact of the subject project to be located at Shepherd Canyon Road & Paso Robles Drive will be on the Shepherd Canyon Bike Trail, and the public open space north and west of the proposed single family homes.

G-1

RECOMMENDATION

That the mitigation measures requested below be part of the required conditions for approval of the proposed planned unit development (PUD). Because the addition of nine households to the population of the Montclair area does not have a measurable impact on any one existing recreational facility, the primary impact will be on the Shepherd Canyon Bike Trail, on the neighboring open space, and on the vegetation of the Shepherd Canyon Corridor.

SHEPHERD CANYON BIKE TRAIL

The Shepherd Canyon Bike Trail is an important component of the Oakland Trails System. The proposed nine-unit residential development at Shepherd Canyon Road and Paso Robles Drive will have a substantial impact on the Shepherd Canyon Bike Trail. Areas of concurrence with the ADEIR are noted. Additional concerns and recommendations are outlined. Office of Parks and Recreation staff agrees with the following items regarding the alignment of the Shepherd Canyon Bike Trail through the PUD. These items are from page 25 and noted on the attached photo copy of Figure 5, page 7 of the draft EIR. There are three segments to the proposed trail through the PUD. In each segment, a trail easement would be granted to the City of Oakland.

SEGMENT #1 - The trail will follow the project street, from the Paso Robles entrance of the PUD to the west end of the cul-de-sac.

SEGMENT #2 - Between the west boundary of the project street and the west boundary of Lot 9 the easement will be 12 feet wide.

SEGMENT #3 - Between the west boundary of Lot 9 and the west site boundary the easement will be 20 feet wide, with access to the East Bay Regional Park District (EBRPD) property to the north of Segment #3.

The applicant should be required to pave the entire length of the trail through the PUD (Segments #1, #2, and #3) from the entrance at Paso Robles drive to the west site boundary. Additionally, the applicant should be aware that occasional, heavy truck traffic will travel through the PUD. This is the only truck access to the portion of the Shepherd Canyon Bike Trail between Snake Road and Paso Robles Drive.

The truck traffic will include, but not be limited to City of Oakland Park Services and Public Works maintenance vehicles, ranger patrol cars, EBRPD vehicles, and PG&E heavy equipment. Since these vehicles must pass through a potentially private street (Segment #1), the City does not want to be held liable for damage caused by the weight of heavy vehicles. The preparation of the road base and the thickness of the asphalt concrete should be engineered to withstand the potential traffic listed above.

Office of Parks and Recreation staff has some additional recommendations and concerns regarding the trail, signage, and staging area.

1. A sign indicating the presence of the Shepherd Canyon Bike Trail should be installed at the Paso Robles entrance to the PUD. The sign should be designed, constructed, and installed by the developer. Planning Department, Office of Parks and Recreation and EBRPD staff should review the design and location before sign installation.

2. A similar sign should be located at the west end of the cul-de-sac by the trail gate.

3. A new metal swing gate should be installed at the west end of the cul-de-sac. The gate should conform to OGS Municipal Buildings Department standards, including a lock-box to protect the padlock. A "No parking at any time" sign should be affixed to the gate. The gate should be located far enough from the street so that vehicles exiting the trail do not block traffic while the gate is being locked.

4. Responsibility for sign and gate maintenance and, replacement should be assigned to the City of Oakland.

5. Suitable barriers to motorcycles should be constructed at the entrance. The "maze" must allow handicap access. Fencing may be required to prevent unauthorized vehicular access to the trail. Fences should be constructed with large dimension, rough lumber and fastened with carriage bolts, not merely nailed. The lumber should be either pressure treated Douglas-fir or redwood heartwood for maximum durability.

6. The cement concrete curb at the trail entrance should be formed as a driveway so that vehicles entering the trail do not have to "hop the curb."

All of the aforementioned improvements are located on the photocopy of Figure 5, page 7 of the draft EIR.

7. Will any public parking be available on the project street or in the immediate vicinity for trail users? Office of Parks and Recreation staff has observed that the vacant lot at Shepherd Canyon Road and Paso Robles Drive is being used as an informal staging area for trail users. (See Figure 22, Location 28 p. 44.) Provisions for a permanent staging area should be

G12

planned for this development and the Shepherd Canyon Heights development to the northeast.

OPEN SPACE

The options regarding the ownership of the open space are:

1. The open space could be dedicated to the City of Oakland or the East Bay Regional Park District. The public agency would have all maintenance responsibilities.

2. Convey the ownership of the open space to the homeowners. The City of Oakland would be granted development rights. The homeowners would be responsible for long term maintenance.

At this time, option #2 is most attractive to the City of Oakland. The Office of Parks and Recreation does not have the funds to assume additional maintenance responsibilities. The bulk of the work would consist of removing the hazardous pines and clearing brush to conform to California Public Resources Code Section 4291 regarding fire breaks.

Other options which can be explored include:

3. Dedicate the open space to the City of Oakland after all hazardous trees and firebreak material have been removed by the applicant. The City would still be responsible for long term maintenance.

4. Create a special assessment district to fund public agency maintenance activities.

Office of Parks and Recreation staff is interested in eventually creating a large open space parkland by acquiring the undeveloped area below Zinn Drive, including the fire trail, extending down to the existing Shepherd Canyon Bike Trail. The area is currently owned by PG&E and other private parties. The area includes the fire trail, a foot path connecting the fire trail to the bike trail, and a small seasonal waterfall. Accepting the Open Space parcels being offered by the developer, especially Parcel A, would be a positive step towards this goal.

Parcel B is too small to be considered a viable public open space. Parcel C may not be considered viable public open space because of its close proximity to the houses. Parcel A would be the most desirable area in terms of its size and its separation from the proposed development.

VEGETATION

Office of Parks and Recreation staff agrees that the selection of replacement plant material should reflect the natural vegetation of the Shepherd Canyon area. In order to screen the project, especially along the Shepherd Canyon frontage at the east end of the site the addition of coast redwood would be appropriate, even though it is not a "site" native. At least five redwood saplings are growing in the narrow strip between the existing dirt trail and Shepherd Canyon Road. These saplings should be noted on the current vegetation maps and saved if they are in desirable locations.

Office of Parks and Recreation staff from the Open Space Section would be willing to work with the applicant to choose appropriate plant species and to review landscape development plans.

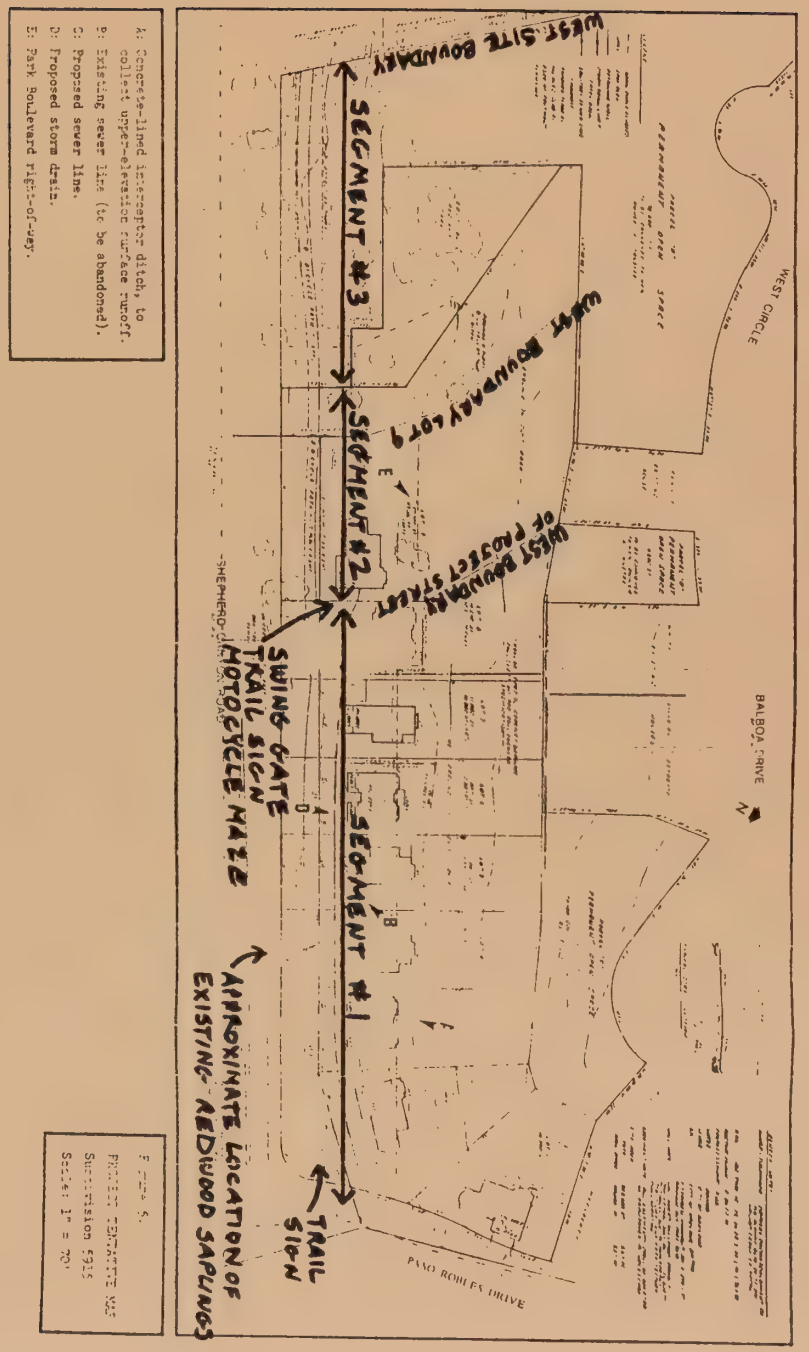
CONCLUSIONS

Recommended improvements and maintenance to enhance the Shepherd Canyon Bike Trail, preserve the available open space, and provide suitable vegetation should be conditions of approval of the proposed project. For coordination of these recommendations as the project ensures, please contact C. W. Weatherton, Park Services Manager, at 273-3092.

H. K. White
Director

Attachments

cc: C. W. Weatherton
A. Frankel
✓W. Yee



CITY OF OAKLAND
Interoffice Letter

To: Engineering Services Attention: Warren Boyd Date: November 14, 1988

From: Engineering & Design

Subject: DEIR Shepherd Canyon Residences

Engineering and Design Services has reviewed the subject DEIR and has the following comments regarding storm drainage:

Concerns expressed on sheet 58, whether runoff from individual subdivision lots should be conveyed onto or across other lots, is a valid concern. The proposed cut-off ditch could be carrying a substantial flow, and an obstruction or joint offset in the concrete lined ditch could cause damage to an individual's property.

OPW, Engineering & Design strongly recommends a revision to the draft EIR mitigating this hazard. One alternative would be to collect drainage in drop inlets at every other property line and to transport intercepted surface flow by closed conduits to the street storm drain system (see attached sketch). Across lots 8 and 9 cut-off ditch could flow as shown in DEIR discharging at existing headwall.

P. Grubstick

PHILIP GRUBSTICK
Civil Engineer

PG/sss

Attachment

500-10

CITY OF OAKLAND
Interoffice Letter

To: City Planning-Zoning Attention: Willie Yee Date: December 7, 1988

From: Engineering Services - OPW

Subject: DEIR Shepherd Canyon Residential Development

Please register the comments on the attached street for the subject DEIR.

Warren Boyd

WARREN BOYD
Supervising Civil Engineer

The maintenance of the drop inlets and closed conduits mentioned in the last paragraph of the attached letter must be addressed. This system must be privately maintained possibly by a neighborhood organization.

WB:gw

500-10

Office of Parks and Recreation staff has some additional recommendations and concerns regarding the trail, signage, and staging area.

1. A sign indicating the presence of the Shepherd Canyon Bike Trail should be installed at the Paso Robles entrance to the PUD. The sign should be designed, constructed, and installed by the developer. Planning Department, Office of Parks and Recreation and EBRPD staff should review the design and location before sign installation.

2. A similar sign should be located at the west end of the cul-de-sac by the trail gate.

3. A new metal swing gate should be installed at the west end of the cul-de-sac. The gate should conform to OGS Municipal Buildings Department standards, including a lock-box to protect the padlock. A "No parking at any time" sign should be affixed to the gate. The gate should be located far enough from the street so that vehicles exiting the trail do not block traffic while the gate is being locked.

4. Responsibility for sign and gate maintenance and, replacement should be assigned to the City of Oakland.

5. Suitable barriers to motorcycles should be constructed at the entrance. The "maze" must allow handicap access. Fencing may be required to prevent unauthorized vehicular access to the trail. Fences should be constructed with large dimension, rough lumber and fastened with carriage bolts, not merely nailed. The lumber should be either pressure treated Douglas-fir or redwood heartwood for maximum durability.

6. The cement concrete curb at the trail entrance should be formed as a driveway so that vehicles entering the trail do not have to "hop the curb."

All of the aforementioned improvements are located on the photocopy of Figure 5, page 7 of the draft EIR.

7. Will any public parking be available on the project street or in the immediate vicinity for trail users? Office of Parks and Recreation staff has observed that the vacant lot at Shepherd Canyon Road and Paso Robles Drive is being used as an informal staging area for trail users. (See Figure 22, Location 28 p. 44.) Provisions for a permanent staging area should be

G-12

planned for this development and the Shepherd Canyon Heights development to the northeast.

OPEN SPACE

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At this time, option #2 is most attractive to the City of Oakland. The Office of Parks and Recreation does not have the funds to assume additional maintenance responsibilities. The bulk of the work would consist of removing the hazardous pines and clearing brush to conform to California Public Resources Code Section 4291 regarding fire breaks.

Other options which can be explored include:

3. Dedicate the open space to the City of Oakland after all hazardous trees and firebreak material have been removed by the applicant. The City would still be responsible for long term maintenance.

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Office of Parks and Recreation staff is interested in eventually creating a large open space parkland by acquiring the undeveloped area below Zinn Drive, including the fire trail, extending down to the existing Shepherd Canyon Bike Trail. The area is currently owned by PG&E and other private parties. The area includes the fire trail, a foot path connecting the fire trail to the bike trail, and a small seasonal waterfall. Accepting the Open Space parcels being offered by the developer, especially Parcel A, would be a positive step towards this goal.

Parcel B is too small to be considered a viable public open space. Parcel C may not be considered viable public open space because of its close proximity to the houses. Parcel A would be the most desirable area in terms of its size and its separation from the proposed development.

VEGETATION

Office of Parks and Recreation staff agrees that the selection of replacement plant material should reflect the natural vegetation of the Shepherd Canyon area. In order to screen the project, especially along the Shepherd Canyon frontage at the east end of the site the addition of coast redwood would be appropriate, even though it is not a "site" native. At least five redwood saplings are growing in the narrow strip between the existing dirt trail and Shepherd Canyon Road. These saplings should be noted on the current vegetation maps and saved if they are in desirable locations.

Office of Parks and Recreation staff from the Open Space Section would be willing to work with the applicant to choose appropriate plant species and to review landscape development plans.

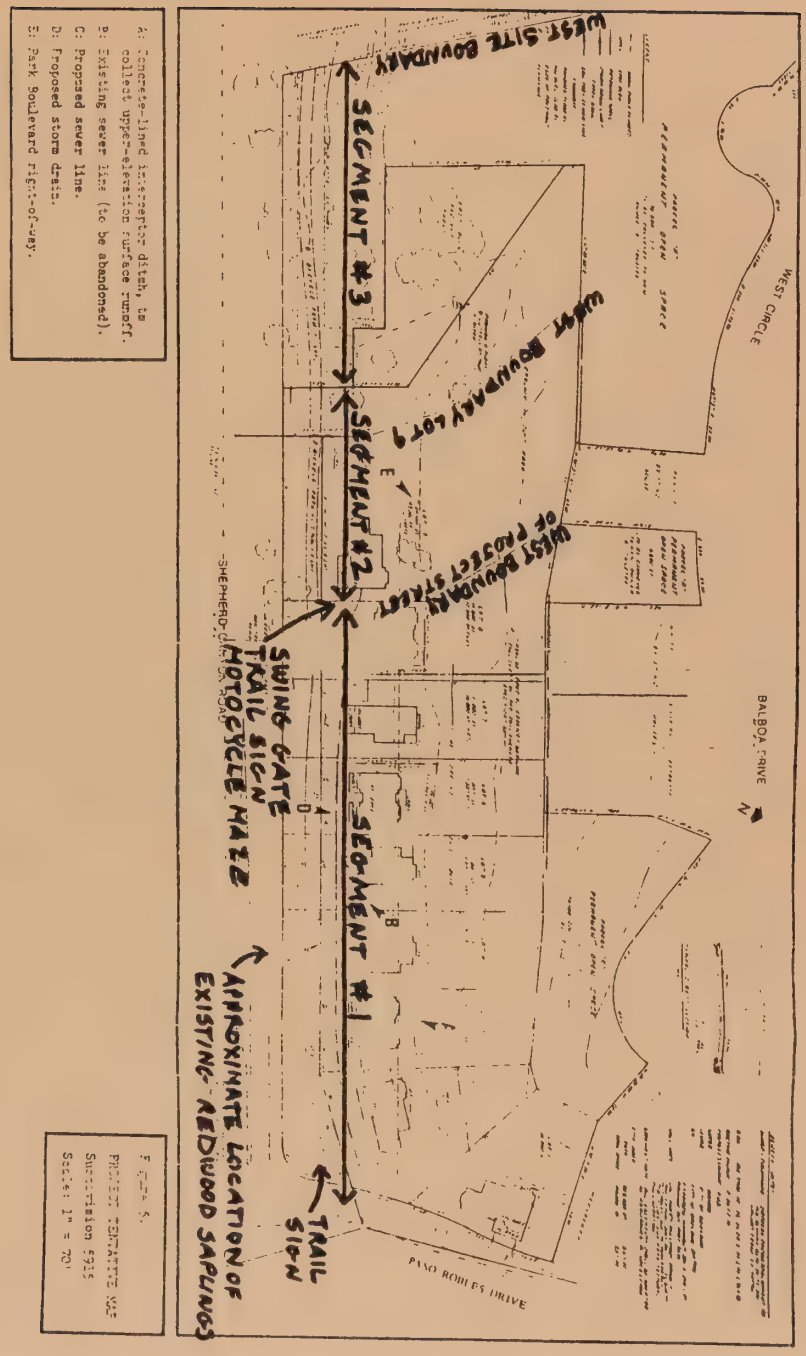
CONCLUSIONS

Recommended improvements and maintenance to enhance the Shepherd Canyon Bike Trail, preserve the available open space, and provide suitable vegetation should be conditions of approval of the proposed project. For coordination of these recommendations as the project ensures, please contact C. W. Weatherton, Park Services Manager, at 273-3092.

H. K. White
Director

Attachments

cc: C. W. Weatherton
A. Frankel
✓W. Yee



CITY OF OAKLAND
Interoffice Letter

To: Engineering Services Attention: Warren Boyd Date: November 14, 1988

From: Engineering & Design

Subject: DEIR Shepherd Canyon Residences

Engineering and Design Services has reviewed the subject DEIR and has the following comments regarding storm drainage:

H-1

Concerns expressed on sheet 58, whether runoff from individual subdivision lots should be conveyed onto or across other lots, is a valid concern. The proposed cut-off ditch could be carrying a substantial flow, and an obstruction or joint offset in the concrete lined ditch could cause damage to an individual's property.

OPW, Engineering & Design strongly recommends a revision to the draft EIR mitigating this hazard. One alternative would be to collect drainage in drop inlets at every other property line and to transport intercepted surface flow by closed conduits to the street storm drain system (see attached sketch). Across lots 8 and 9 cut-off ditch could flow as shown in DEIR discharging at existing headwall.

P. Grubstick

PHILIP GRUBSTICK
Civil Engineer

PG/sss

Attachment

500-10

CITY OF OAKLAND
Interoffice Letter

To: City Planning-Zoning Attention: Willie Yee Date: December 7, 1988

From: Engineering Services - OPW

Subject: DEIR Shepherd Canyon Residential Development

Please register the comments on the attached street for the subject DEIR.

Warren Boyd

WARREN BOYD
Supervising Civil Engineer

The maintenance of the drop inlets and closed conduits mentioned in the last paragraph of the attached letter must be addressed. This system must be privately maintained possibly by a neighborhood organization.

WB:gw

500-10

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